HERE is a new, synthetic and extremely valuable approach to modern psychology. It is behavioristic without violating the facts of human personality; it treats of the integrated personality without violating the methods of behaviorism. The concept of adjustment and consummation is consistently used, both for normal and abnormal behavior, and the relationship of so-called normal and abnormal conduct is shown from a new point of view. A new theory of learning and a new system of personality classification are included. This is the first extended study of the behaviorism of the whole personality as well as the most inclusive behaviorism that has ever been presented, covering every point from the simplest behavior—of reflexive and automatic nature—to the functional behavior of "belief" and "as if" attitudes, and the complex personality adjustments shown in reactions to art, religion and philosophy.

MODERN PSYCHOLOGY

NORMAL
AND
ABNORMAL

MODERN PSYCHOLOGY

NORMAL AND ABNORMAL

A Behaviorism of Personality

By

DANIEL BELL LEARY, PH.D.

UNIVERSITY OF BUFFALO

Author of

"That Mind of Yours,"
"Education and Autocracy in Russia,"
"The World of Reason," etc., etc.

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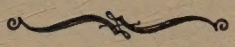

"In the tangle of human beliefs, as conventionally expressed in talk and literature, it is easy to distinguish a compulsory factor called facts or things from a more optional and argumentative factor called suggestion or interpretation; not that what we call facts are at all indubitable,—but that in the direction of facts we come much sooner to a stand, and feel that we are safe from criticism. To reduce conventional beliefs to the facts they rest on —is to clear our intellectual conscience of voluntary or avoidable delusion.—To reduce conventional belief to the recognition of matters of fact is empirical criticism of knowledge."

SANTAYANA

FOREWORD

THE purpose of this book in the field of human behavior is to present, first, a sober and scientific basis for the study of the behavior of personality,—of the integrated, complete human organism; secondly, to deal with, evaluate and classify personality on the basis of types and degrees of dynamic adjustment to the physical and social environment; finally, to bridge the gap between physiology, as an atomism of human behavior, to such a synthetic point of view as may properly be called a behaviorism of personality.

The method of this book is objective and scientific and endeavors, first, to present the fundamentals of organic behavior as a basis for a constantly widening and ever more inclusive point of view; secondly, by an interweaving of arguments and conclusions, to make clear the essential likeness of all human behavior as being merely various and varying types and degrees of personality adjustment; and, finally, by showing the relativity of psychological terms ordinarily used in too absolutistic a sense, to again make clear that human behavior is always and everywhere the effort to consummate drives and achieve a tolerable adjustment, and shows differences simply as regards qualitative results, being successful or unsuccessful, using different mechanisms, being based on facts or on symbol and delusion, and deserving at times the judgment of being normal,—at other times being more properly thought of as abnormal in one sense or another.

The emphasis, throughout, is on the behavior of the personality, and even in treating of the simpler forms of reflexive and automatic behavior, their relationship to higher patterns of integration is consistently stressed, so that the atomistic and barrenly analytical aspects of some types of modern psychology are consistently replaced by a synthetic and dynamic conception of personality and its forms and types of adjustment and consummation.

DANIEL BELL LEARY

New York City
June 16, 1928

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"Living when human faith is again in a state of dissolution, I have imitated the Greek Sceptics in calling doubtful everything that—anyone can possibly doubt. But since life and even discussion forces me to break away from a complete scepticism, I have determined not to do so surreptitiously nor at random.—Instead, I have frankly taken nature by the hand, accepting as a rule in my farthest speculations the animal faith I live by from day to day. There are many opinions which, though questionable, are inevitable to a thought attentive to appearance, and honestly expressive of action."

SANTAYANA

CHAPTER I

GENERAL INTRODUCTION

1. Preliminary Considerations. 2. The Purpose of Psychology. 3. The Various Schools of Psychology. 4. The Relations of Psychology to Other Sciences. 5. The Nature of Science in General. 6. Definitions of Psychology. 7. Basic Assumptions of Psychology. 8. The Field of Applied Psychology. 9. Summary. Bibliography.

[1]

Preliminary Considerations. We are all psychologists; but we are not all good ones. This has its good as well as its bad results, for the almost universal interest in things human makes for a ready reception of each new account of findings and speculations, while the very same interest leads to inadequate and inaccurate reports, and to a too enthusiastic and a too biassed agreement with those results most congenial to our hopes and desires. What is needed is not less psychology but better psychology; better technique, better approaches, better and keener evaluation of results and findings. It is not hard to see the reasons for this wide-spread interest in human nature and its doings, its origins and its destinies. Experience shows us a diversity in human conduct, ranging from the extremes of imbecility and idiocy to the heights of genius, and from the stability of the well-balanced, almost imperturbable individual to the flightiness and abnormalities of the neurotic and insane. We see children, all of one family, yet differing widely from one another. We see parents differing as widely from their children, and we see individuals and even groups depart, almost in a moment, from their accustomed ways and habitual actions to conduct that is, at first sight, irreconcilable with their previous behavior. We see some individuals improve, some regress and lose what they once had. And we too often identify our own self with the characters and personalities we observe and wonder, sometimes quite futilely, whether we, too, will not some day perhaps undergo the same strange transformation. All this is, of course, the amateur attitude, since it is based, at best, on haphazard and incomplete knowledge and observation. Primitive man speculated in much the same way and came to just as inadequate and partial con-

clusions as we are wont to do when we approach the subject of human conduct in this way.[1]

All the sciences, both the group of so-called natural or physical sciences as well as the so-called social sciences have gone through this amateur stage, but while the physical group has passed well beyond its earlier primitive character and done away with much if not all of the ideas and attitudes which interfered with its progress and its growth to true science, the group to which psychology belongs still tends, in some respects and in some quarters, to remain fixed in its infantile state and to be too uncritical and speculative. This is due, as we shall see, to several factors, each of them worth some consideration since they still tend to interfere with progress and the emancipation of the subject from its primitive period.[2]

In the first place, the field of psychology, however we define it and regardless of the school to which we adhere, is extremely complex, far more so than that of any other field of research. In the second place, it is often difficult, sometimes impossible, to obtain the same conditions of experimentation that can be had in the fields of the physical sciences. For example, one can observe, say, a piece of metal under one set of conditions, and then observe the same unchanged piece of metal or another exactly like it in shape, weight, make-up and molecular structure under differing conditions and continue with this differential process indefinitely. One can not, however, do this with, say, a child. One cannot, for example, educate a child one way, then remove all traces and effects of that education and rear it a different way in order to compare the results. This simple, though not always obvious fact none the less interferes with the making of many experiments and the drawing of many conclusions in a direct way. We often have to go about psychological researches indirectly, observing here and there, experimenting in this direction and that, finally coming to a conclusion in which, to be sure, we weigh the evidence, consider alternatives and all that, but frankly must admit we have no direct and decisive objective proof. Current discussions concerning instinct, or rival theories as to the nature of intelligence, or differences of opinion concerning what so-called intelligence tests really test are modern instances in point. The whole mass of material of the Freudian

[1] See, on this general but very importance topic, Radin, Boas, Frazer, particularly his *Worship of Nature;* Levy-Bruhl. For a Freudian treatment of some of the theoretical factors involved see, with caution, Bradby. Confer, also, Dresslar; Ogburn and Goldenweiser, Ch. XXXIV.

[2] See White, particularly his chapters on the social and biological sciences. Also any history of science.

school and associated derivatives is another instance; no one has ever proven some of the contentions of Freud in the same way that theories are proven in physics or chemistry or even in biology and physiology.[3]

But this does not mean, of course, that psychology is at a loss for a technique which will enable it to be dignified with the adjective "scientific"; it does mean that we must understand what is the difficulty and find a way around it. But there are further difficulties; the supposed sanctity of the field of research in which psychology is interested is an outstanding factor interfering with full and free inquiry and an open presentation of results and findings. Here, again, psychology is but paralleling the earlier stages of the physical sciences, and finding not one difficulty but many. Where biology and the theory of evolution has its Dayton, Tennessee, psychology, particularly when it concerns itself with sex, religion, education, testing and other such intimacies, finds all but a few against not merely the results of investigation but the very investigation itself.[4]

And, finally, we have the further difficulty of so-called "introspection", a subject requiring our later detailed examination, though here we need merely note the general fact that in no other science is there the same conflict of testimony as in psychology. That is, however minutely or continuously we study, say, the rocks, or the stars, or lower forms of life, or even the higher mammals apart from man, we do not find a conflicting verbal report deliberately emanating from the objects studied themselves. The rocks do not tell us, by word or by any species of communication of their own knowledge, what is what. They remain silent while we study. The evidence, as it were, is all of a piece; all on one level. This, notoriously, is not so with human beings. However we would study them, there is also to be taken into account their own report of their own self-study. And one cannot just glibly dismiss it all as mere introspective nonsense; nor can one cordially accept it as a statement of undoubted fact. It is, in part, this dilemma and this duplicity of evidence concerning human behavior which has brought about the rival theories and opposing conclusions of the various schools of psychology, both historically and as regards the present situation. Here, however, we can but note this situation; it remains for later discussion to more thoroughly examine it and to come to

[3] Robinson and Robinson, Ch. I; Dunlap, Ch. I; Weld, Chs. I and II. For a more thorough treatment of the points and method involved see Ritchie; Barry; also as for Note (10).

[4] See White, and for the modern situation see Shipley. Confer, also, Buermyer, Cooley, etc.

reasonable conclusions concerning the value of each type of evidence.[5]

[2]

The Purpose of Psychology. Yet, when all is said and done, when all these difficulties and still others are taken into account, there remains more or less substantial agreement as to the purpose of the study of psychology. Not, be it noted, the definition or the technique or the results of that study, but the purpose. This purpose is simply stated; to obtain accurate, complete, systematized knowledge of human nature. That there will be still further derived purposes which may even become primary in some quarters and under some conditions is quite true; thus, the knowledge acquired by such a study of human nature may, in some hands, be used to further social or political or business purposes; in other hands it may be used to justify, objectively, a philosophy of life or a revealed religion. But the ostensible purpose of the study called psychology, however it may differ in other respects from school to school, is to obtain exact and demonstrable knowledge of human nature. Simple as this may seem it immediately opens up all the problems we have touched on above as well as others quite as complex and important, for the moment we attempt to define the subject in any detail, or to even roughly suggest methods for obtaining that desired knowledge of human nature, or to state even simple results, there is immediate disagreement.

The history of psychology, as well as a survey of the present situation show much the same characteristics. However firmly several individuals may verbally agree that the purpose of the study of psychology is to gather and classify the facts of human nature, the minute they begin to do so, divergencies of several kinds appear. How is one to begin? What is one to look for? Will one experiment? Or will one merely ask questions? If one does ask questions, to what extent and in what particular things will one accept the answers as authentic? And how is one to know? And, still worse, all these considerations lead, inevitably, to the laying clear of definite preconceptions, definite methodological and technical attitudes, valuations and ulterior purposes, so that what seems clear to a given group of observers as con-

[5] Robinson and Robinson, Ch. I. See, also, the introductory chapters to current texts in general psychology, such as those of Warren, Watson, Woodworth, Carr, Titchener, Perrin and Klein, McDougall, Hunter, Meyer, Dunlap. See, particularly, Weiss, Chs. I to III; Bentley, Introduction and Ch. I.

stituting excellent material for the psychologist to study, seems to another equally sincere and equally intelligent group as quite outside the field of research.[5, 6]

All this need not be taken as a sign of either the decadence of the subject, nor of its worthlessness, nor yet of its insolvency. Other sciences, in different ways and for different reasons, show something of the same phenomena. The real underlying difficulty is that psychology has not yet, in all quarters and for all people, come to be seen as a definite field of research touching, to be sure, on many others, dependent on some, with some dependent upon it, but none the less having a fairly clearly marked field of work that is its own and none others. Nor is traditional philosophy the same as modern psychology, for all that each may and does treat of much the same things, though this point also will have to wait for later treatment. In short, and taking into account all affiliations and relationships, there is a residue combination of purpose, technique and methodology which, in a modern sense, is emphatically and definitely to be called psychological and which offers results and comes to conclusions that stand on their own merits. Psychology is neither bankrupt nor a mere hodge-podge of the findings of other sciences. This, at the present moment in the development of psychology, would probably be granted without much argument, but it has been argued and will be again for the same reasons which have given rise to the question in the past, namely, the uncertainty and lack of agreement as to subject matter, method, the use of various points of view and the taking of various assumptions concerning interpretation, limitations and all that. It seems wiser, therefore, to thresh this out quite thoroughly before we begin to deal with material which is controversial or to work in terms of assumptions which can be and have been questioned. And the best way to at least tentatively settle some of these problems is to consider, first, the various schools of psychology and, secondly, the relations of psychology to the other sciences, both physical and social.

[3]

Schools of Psychology. It is not necessary for our present purposes either to catalog all the psychologists or to exhaustively

[6] For a detailed and historically orientated treatment see Moore, J. S., Chs. I to III. See, also, Roback, Appendices B and C and chart at end of book. Also, Murchison, particularly Ch. 14 (Dunlap, *Theoretical Aspects of Psychology*), and Ch. 17 (Bentley, *Historical Derivation*). Also Robinson and Robinson; Woodworth, Chs. I and II. For critical presentation of the 'Gestalt' point of view, see Koffka, particularly Ch. I. See Klemm and Murphy for general historical treatment.

indicate all the variations of emphasis and point of view which now exist or have existed in the past. It will be sufficient to indicate main differences and emphases, large lines of cleavage and opposition, characteristic organizations of approach and technique, always remembering that each type or emphasis runs well into each other one, so that such lines as we draw are, as in fact, more or less diagramatic and demonstrational; nor should the word "school" be taken too rigidly. The first difference worth noting is that between what is called the subjective psychology and the rigidly objective, more commonly known, respectively, as introspection and behaviorism. But this is, itself, an excellent example of the difficulty and artificiality of naming schools of psychology, for the introspectionist also uses objective methods and the behaviorist, however rigid he ostensibly is or would be, is also at times and in certain circumstances an introspectionist. The introspectionist is interested in consciousness, awareness, awareness of awareness, the self, the "I", images, and all sorts of other things that the behaviorist of strict training and rigid technology scorns, ignores and denies, even though, strangely enough, the denial, when ardent and detailed, would seem to indicate some attention of an introspective nature on the part of the behaviorist as the only possible basis of so strange a denial. The introspectionist turns his attention inwardly; remembers, compares mentally, derives data from self-communion, asks others to do the same; the behaviorist theoretically treats the human animal the same as he would any lower form of life and observes merely the overt and objective responses the animal makes in much the same manner as would be used by the physicist or chemist in observing the reactions of bodies or compounds in their laboratories. Furthermore, the subjective school is apt to be ultra-rational and systematic; the behavioristic more empirical and pragmatic.

To take a simple example; suppose a given individual is angry. The introspectionist will ask for a description of how it seems, how it feels to be angry; will question concerning the images, the sensations, the percepts, the thoughts or associations that occurred during the fit of anger seen retrospectively or, it may be, actually introspectively, at the time. The behaviorist will, quite differently, ask the angry individual nothing, but will observe the facial expressions, the postural changes, the increase or decrease in muscle tonus, the changes in temperature, blood-pressure, heart-beat, skin tension and conductivity, the internal glandular changes, the changes in blood chemistry, record the results of associational or other tests, and a host of other directly

or indirectly observable phenomena; in a word, will observe and as far as possible quantitatively measure the conduct or behavior changes of the individual in question. To be sure, this antithesis is somewhat exaggerated in the interests of making clear the distinction involved. But, in fact, introspectionism and behaviorism are radically different in technique, assumptions and conclusions.

Another line of general division and opposition runs in terms of mechanism or purpose. Roughly stated it means that, from the point of the mechanists, all human conduct is in response to a given situation in terms of the total complex of heredity plus what modifications experience to date has brought about. What we do is forced, determined, dictated by the past and the present, is inevitable, inescapable. My conduct, from such a point of view, in whatever circumstances I find myself, is as rigidly determined by the past and the present as the locus of a falling body coming to rest on a surface is determined by friction, gravity, the impelling forces and the obstacles met with. The purposive school, on the other hand, insist that what we want to do, what we intend to do, what we wish to do, has its effect on conduct; that conduct, in a word, is as much determined by the future, which does not exist yet, as by the past which has once existed and the present which now exists. Again, while these opposing points of view have been somewhat exaggerated in that qualifications have been omitted, they still do represent emphases and opposing schools.

A third line of demarkation is that of the mentalists and the materialists, using, again, terms that emphasize the differences rather than the agreements. The mentalists insist that psychical activity is not the mere reflection of physical activity; that over and above the body and the brain, there is something different, on a different level, call it mind, spirit, consciousness, what you will. Thought is not the functioning of matter. The materialists, on the other hand, while differing among themselves, would hold just the reverse, namely, that all is physical, and that all human conduct, be it thinking, feeling, emotions, muscle activity or nerve activity, is all the functioning of physical, material cells, and that without such structure there can be no activity at all. Whatever acts is physical, however it acts. On the one hand we have an informing power or spirit using the structure of the physical body; on the other we have structure as the basis, solely and indispensably, of function, however complex, however delicate, however noble that functioning may be in terms of morals or religion.

A fourth line of division runs between the more static approach and attitude which is interested in states of mind or body and

that which is more advisedly termed dynamic and which interests itself in processes and activities. Roughly speaking, structuralists are interested in states, functionalists in processes; the one is interested in content, the other in the flow of activity. Naturally, there can be no activity without structure, and presumably there is activity wherever there is structure; but, as has been said, these are emphases rather than exact and impermeable barriers existing between contrasting attitudes. Even Titchener, a leading exponent of structuralism, defines psychology as "the science of mental processes", and Angell, a leading functionalist, writes, "All our sensations, all our emotions and all our acts of will" are "so many expressions of organic adaption to our environment." Thus the structuralist acknowledges process or change or function, and the functionalist admits structure and its adaptation.

Still another emphatic difference of opinion is to be found, quite apart from the "introspective-behavioristic" contrast discussed above, though naturally related to it, in that which takes issue on the question of the nature of the Self or consciousness and the validity of psychology concerning itself with these concepts. The school of self-psychologists insists that the basic fact in psychology is the conscious self, and that both functionalism and structuralism ignore this, and are therefore abstract and artificial; Self-psychology reconciles both by showing the relationship of the self to both structure and function. As opposed to this, structuralism and functionalism, on the whole, both reject this self and behaviorism goes one step further and rejects even consciousness.[6]

Naturally, psychologists as individuals do not follow clear cut lines like the above, and liaison groups are to be found whose tenets embrace apparently quite opposing partial points of view. But, to give some sample affiliations, the mentalists or spiritists will, on the whole, be found to be introspectionists, though the reverse is not so true. The materialists will be found to be more nearly behavioristic and against introspection, and will be more apt to be mechanists than purposivists. But such generalizations as these are not to be taken too seriously, but rather simply as indicative of conditions past and present. It is not so important to decide some of these apparently irreconcilable alternatives as it is to find a working hypothesis for procedure, on the basis of which some of these things may eventually be settled on the grounds, not of speculation or preference, but of decent and convincing evidence. But we will return to this point later.[7]

[7] It will be worth while for the reader to consider the assumptions, the implications and the general results of adopting any one of the various fol-

Several other matters concerning which there is lack of agreement deserve attention. The so-called "Gestalt" psychology, now receiving much attention, while not nearly as new as some of its exponents would have us believe, does represent a point of view at variance with what might, by contrast, be called the atomic attitude. Is conduct on the basis of a simple stimulus and in terms of a simple response, or in terms of a personality reacting to a complex situation? Is mind or experience built up of sensational atoms, or of larger groups or configurations? This, too, remains to be examined in more detail later. Similarly, what is the relation of what we call body and what we call mind, assuming we can define these elusive terms? There are at least seven typical explanations and rival theories! But, again, until we have investigated several other matters, it will be wise to defer the framing of such a working hypothesis as will avoid the antagonisms of all the above conflicting points of view and permit the consideration of such details of human conduct as will, in the end, give better ground for a more decided statement of what psychology is and how it should proceed, what assumptions it should take and what reject.

[4]

Psychology and Other Sciences. It may seem, perhaps, that the use of the phrase "other sciences" begs at least one important question, but the student or reader may keep in mind this apparent assumption until we have come to the end of these preliminary considerations, at which time we will endeavor to justify the phrase. Undoubtedly, whether psychology is a science or not, it has affiliations with sciences. In fact, it has been said that were there no biology, no physiology, no chemistry and no physics, there would be no psychology, though, strictly speaking, this is not true actually or historically, for there has always been

lowing definitions of psychology, as well as analyzing out their agreements, their differences and relationships; thus, Psychology is the description and explanation of states of consciousness as such (James); Psychology is the science which studies behavior and consciousness (Allport); Psychology is the science of experience, Psychology is the science of mental processes (Titchener); Psychology is the science of the Self (Calkins, Stout, Royce, Baldwin); Psychology is the science of psychic states both as to content and form, regarded from an objective standpoint,—(Sidis); Psychology is the science of conscious and near-conscious activities of living individuals (Woodworth); Psychology is the science of conscious processes (Brentano); Psychology is the science of the human personality (D. T. V. Moore); Psychology is the study of human nature (Robinson). Confer, again, Murphy, particularly Pts. II and III and the Supplement.

a body of knowledge concerning human nature, however inaccurate and speculative, and in some respects ante-dating the establishment of the definite biological and physical sciences. The real point underlying this attitude is best put rather differently, namely, does psychology, define it as one will, consist of anything more than a collection of facts from other sciences, plus some more or less germane and sensible speculation upon them?

Undoubtedly, for example, modern researches in biology, physiology, neurology, and even chemistry, particularly that branch called bio-chemistry, have thrown light upon and given factual information toward the understanding of psychological problems, and this holds true whatever our position, whether rigidly behavioristic or more inclined toward the mentalistic, introspective or self-psychology point of view. Certainly, whatever our preconceptions, whatever our prejudices, our final purposes or our underlying methodological approaches, we must all acknowledge that information concerning the evolutionary beginnings of sense-organs, ductless glands, nerve-cells and nervous systems, facts concerning the nature of the nerve impulse, brain anatomy, experiments with ductless gland secretions, with animals surgically deprived of portions of the brain, with the effects of drugs, our knowledge of the pathology of some forms of insanity and the effects of some forms of disease on mental and muscular behavior have all modified and will modify still more our psychological beliefs and principles. The differences of opinion will show themselves as regards the relative importance of these things, of course, but on all hands they will be admitted as worthy of consideration. A behavioristic attitude, if strict, will admit all such findings and tend to see in them the final and complete explanation of human conduct, whereas a more mentalistic attitude will see in them merely merchanisms and still insist that underlying them are other and more fundamental factors and conditions of another and superior nature.

If we whole-heartedly accept the findings of biology and physiology and allied fields of research, we find ourselves in an interesting position. The behavior of human beings, psychologically speaking, or as observed from a psychological level or point of view, reduces to physiological facts and findings, in turn to those of the field of biology, then to those of bio-chemistry, then to chemistry in general and then, inevitably, to physics as the science of matter in motion. This is not to imply that we now have the information or the proof, indubitable and complete, of such dependence of psychological facts on down through the various sciences to the fundamental theses of physics, but it is

meant to indicate that this is at least a conceivable and a workable hypothesis in psychology; workable, that is, in the sense that more information can be gathered, is being gathered, that will tend to further substantiate this attitude and this conception of the relation of psychology to the biological sciences. To be sure, this whole program opens up additional matters for discussion and dispute, and to which we will return, but it is a program and it has its adherents. From this point of view, human conduct is a form of matter in motion, and while it is complex matter in extremely complex motion, that does not contradict the statement.

One of the chief objections usually offered to types of explanation and scientific hypotheses of this rather radical nature is that the simple does not explain the complex, but contrariwise, the complex explains the simple. This criticism, often called the theory or doctrine of "emergent evolution" may be made clear by the following example: thus, water is made up of hydrogen and oxygen in certain proportions, may be analyzed, synthesized and otherwise modified by the science of chemistry, but no one knowing merely oxygen and hydrogen as separate and uncombined entities could possibly forecast what would be the properties of water. This is, perhaps, true enough, but it misses the point. Water is, to be sure, and in a sense, more than hydrogen and oxygen, but its properties are none the less due to the fact that it is made up of these elements in the proportion in question. We do know more about water, how to make it, control it, modify it when we know its simpler constituents and their relative proportions. So with human conduct; it is not claimed that one could forecast from a knowledge of protoplasm the behavior of a complex organism, or from a knowledge of nerve impulse and glandular activity what a given individual would do under given circumstances, but it is claimed that knowing these and similar things we know profoundly more about human nature, how it is to be controlled and modified than without such knowledge, and that introspection or speculation or any other subjective procedure cannot and will not give such information and that lacking it we lack vital and indeed indispensable knowledge. Here, again, we merely raise the theoretical point in question; it remains for later sections and chapters to indicate, in more detail and with reference to specific matters, the value and application of such basic biological knowledge.[8]

[8] See, for various emphases on the biological and mechanistic approach and point of view, Loeb, *Mechanistic Conception of Life,* Chs. I and II particularly, his *Dynamics of Living Matter,* and *Forced Movements,* throughout. Parmalee, particularly Chs. I to III and XXI; Jennings, Chs. XII to

The relations of psychology to the other so-called social sciences, notably sociology, economics, history, anthropology, and to domains of knowledge and human activities such as art, religion and politics are more easily seen and acknowledged. All such subjects or all activities within the realms of such subjects involve human behavior, and whatever psychology may be and whatever definite or tentative attitude we take toward psychology, these other matters are to be resolved in terms of the basic psychological attitude. Political activity, religious behavior, artistic appreciation, the conduct of primitive man, the behavior of individuals or crowds in history, one and all are psychological matters; no other and different explanation or attack is necessary in examining any one. Man is everywhere man, however different his environment or his momentary occupation and interest; each such field of inquiry is merely an emphasis on certain types of response to certain types of stimuli. Naturally, from this point of view, and in the light of the previous discussion on the physical and biological sciences, psychology stands, on the one hand, dependent on one group and has dependent upon it the other. It is thus a body of knowledge which at one and the same time builds upon the results of other researches and in turn may be built upon for the understanding of still more complex conduct.[9]

[5]

The Nature of Science. We are now in a position to begin to gather together the various threads of argument and to approach the matter of so defining the term and the subject psychology that we will have a decent working basis for the more detailed examination of the fundamentals of human behavior and the application of them to the fields treated in this book. Science differs from casual knowledge in that it is based on observation, is so far as possible quantitative, uses experiment wherever possible, and is not colored or biassed by the personal idiosyncrasies or preferences of the investigator. It looks for causal connections between events, always preferring to explain one event in terms of another that is equally observable rather than

XXI. For treatment more specifically applying to human affairs, see Paton, Chs. I to III; Raup, Chs. I to IV; Crile, Chs. I to VI and XIV to XVI; Weiss, Chs. I to III and XVII; Washburn, Chs. I to III. For the question of emergent evolution see later chapters.

[9] Ogburn and Goldenweiser, particularly Chs. VII, XIV, XVIII, XXII, XXVIII, XXIX, XXXI, XXXIII; Allport, Ch. I. For the complementary side of Note (7) see Wallas, Sorokin, Bernard, Exline, Tead, Overstreet, Laird.

in terms of some imagined or purely speculative power or principle which often begs the very question in issue. Science seeks, too, the simplest explanation consistent with the events examined or observed, and this law of parsimony forbids the intrusion of far-fetched or purely hypothetical explanations when a simpler and more concrete one is at hand. Such hypotheses as science finds it necessary to frame are framed with the definite understanding that they are means to an end; to the end, namely, that on the basis of such speculation, further observation and experiment can and will be made toward the obtaining of a more concrete and more demonstrable explanation or description of the facts in question. Furthermore, the very word "explanation" has, in science, much the same meaning as description; to thoroughly describe all the facts involved in a given problem is to explain it so far as science is concerned. Ultimate and final explanations, whatever that term may mean in philosophy, are not the concern of science as science, though it is true that every science and every scientist verge on just such ultimate and final matters now and then. But in so doing they cease, for the moment, to be scientists and become traditional philosophers, something perhaps equally good but usually quite different. Science, furthermore, for all the frequently stressed distinction between pure and applied science, universally aims at ultimate prediction and control. Where traditional philosophy and stereotyped speculation aim primarily for a rationally and verbally consistent system of thought, science aims at such knowledge, such classification, such description and such relating of events to one another, that the behavior of the objects within the domain of any given science can be controlled, predictions can be made, and modifications that are desired can be achieved.[10]

[6]

Definitions of Psychology. The above all too brief analysis of the nature of science in general will give us a key to the program and the definition of a scientific psychology. To be sure, psychology may be, as it has often been and in some quarters still is, a branch or a species of philosophy, but from the view point and plan of this book, it is treated as a science. As a science, it will have to observe the conditions of science in

[10] For thorough treatment of the subject see Ritchie, throughout; Pearson, Chs. I, III, IV, IX, X; Robinson and Robinson, Ch. I; Moore, J. S., particularly Chs. IV and V; Buermeyer, Cooley, Chs. I, IV and XIII; Vaihinger, Chs. I to V; Wolfe, particularly Chs. IV and XII, but also throughout; Weld, particularly Chs. I and IV; Barry throughout.

general; rely on observation, demonstration, experiment, measurement, show its ability to control, predict, modify, relate each of its statements to others equally well established, and rest ultimately on facts that lie within the observation of human nature, and where it speculates, frankly acknowledge the fact and use it as a basis for the obtaining of sounder information, checking such speculation in terms of facts already known and those obtained in the process of verifying the new hypotheses.

We have seen that the fundamental purpose of psychology, whatever ulterior purposes may be associated with it, is universally to obtain knowledge concerning human nature. We add here, then, that from the point of view of this book psychology is the science of human behavior; not, be it noted, the science of mind, or of consciousness, but of human behavior in its entirety. This, it should be realized, and recalling the sections on the various types or schools of psychology, does not exclude the facts of introspection any more than the facts of more objective observation. Certainly, if an individual reports that he feels dizzy, or has had a dream, while it is an introspective report, it is also a fact of human behavior that he says so and should, in any complete program of the investigation of human behavior, have its place. Still further, such theories, hypotheses and as yet unproven and unsubstantiated generalized explanations as seem almost inevitably to arise in any field of investigation, are to be taken just as such, and to be used as bases for further investigation, experimentation, and observation. In short, psychology as a science possesses the characteristics of science in general and has, as differentiating it from other sciences, its peculiar and particular field of research, namely, the behavior of human beings as human beings. Where biology deals with life in general, where physiology deals with the structure and function of various portions of an organism, psychology deals with that organism as a whole, as an integrated and orientated individual in contact with other individuals in a complex external environment, partly physical and partly social, in short, as a personality.

Psychology, as the science of human behavior in its entirety, need not err in the direction of structuralism by refusing to see the dynamics of experience; nor need it err in the direction of functionalism by refusing to see the structural aspect of all behavior. It need not, as we have pointed out, refuse to consider such things as reports of dreams, images, reminiscences and the like, as instances of human behavior which, since they are instances of human behavior, come within the scope of the definition of the subject. To be sure, such reports need not and must

not usually be taken at their face value. To do so would be to transgress that part of the definition which says psychology is a science. Such reports must, if and when considered, be treated in exactly the same way as any other more objective aspect of human conduct; must be substantiated, directly or indirectly, must be brought to terms with whatever other information concerning an individual's conduct we possess, and when lacking such credentials must frankly be labeled as so lacking. Psychology as the science of human behavior can and must speculate as every science that is to progress must do, but such speculations, as has already been pointed out, must be in terms of previously observed facts and must be for the sake of obtaining further facts, and in no case for their own sake or for the sake of logically consistent results unsubstantiated in any other way. Even what the self-psychologists call the Self is a proper subject for investigation provided it is investigated in the proper manner, that is, in terms of what it actually is, namely a report of a subject, and not assumed to be other than just such a report until demonstrable facts indicate. In short, much that some types of rigid behaviorism reject as not proper for psychological investigation is clearly unwisely rejected. We can agree with the behaviorist who claims that the reports introspectively obtained of a given experience are not to be taken as fact, provided he clears up the meaning of this word "fact" which has shifted its significance in the argument. What we introspectively report is fact, as report, when reported. Whether it is a factual report of something which occurred previously is another question, and one worthy of investigation as having bearing on many important problems. But it is a fact as reported whether it is what it further claims and purports to be or not. A lie is a piece of behavior whether deliberate or not, and has its bases in the nature and nurture, the situation and the stimulus, the purposes and the ideals of the individual. Incidentally, some of the more theoretically and even philosophically ardent behaviorists would seem, at times, to be introspectionists themselves, for a too decided report on the absence of this or that element in consciousness, or the very denial of consciousness itself, is certainly, in part at least, based on that very self-communion which is denied. A better behavioristic attitude would be agnosticism rather than active denial. But this is incidental; the point is that such introspective material is a proper subject for psychological investigation provided it is treated in the same way as other types of conduct and given no special privileges.

Psychology, as the science of human behavior, can also bridge

the gap between the mechanists and the purposivists. Much again depends on the definition of the word "purpose." Indeed, so often is this true that it would be worth while to re-define, if it could be done, in unmistakable and simple language, the whole vocabulary of psychology, though this is, in a sense, accomplished by the very process of use and runs parallel with the development of the science. But if the purposivist means that human conduct is, in part, determined by ideas and desires that have reference, verbally, to the future and that involve, as part of their complexity, a concept of time and its passing and the possibility of working toward a goal, then there can be no denial that some conduct is purposive. But if by purposive it is meant that inherited abilities plus the modifications of past experience do not exclusively function in determining what is desired and how it is to be tried for, then the behaviorists can have nothing to do with the program. Like so many psychological problems, half the difficulty is a matter of language.

[7]

Basic Assumptions. We have, in this last paragraph, touched on another problem, one that will now need a little analysis, the question, namely, of what is called, inadequately, free-will versus determinism. It would be better to state the problem in terms of less abstract words. In the long run, it resolves itself into the question whether what an individual does at any given moment, and under given circumstances, be they as complex as you will, is in terms of heredity and training and the momentary situation as a total, or whether it is determined merely on the basis of these things plus another uncaused, free, independent factor, in no sense due to birth, heredity, training or past experience in general or particular. The words heredity and training are to be taken in the largest and broadest sense, and include ideas, ideals, habits, memories, physical and neural structure; anything and everything that was, to begin with, a structure and has become through experience a modified and trained structure, however thorough or however simple that training has been, and whether it was deliberate or not, and regardless of whether we are aware or have ever been aware of the modification and training. To answer this question in terms of a free and undetermined factor which is not part of either inherited abilities or the results of modification and training is to completely destroy the possibility of a science of human behavior. If what I do is not in terms of what I am, we can then have no psychological science, for there

will then always be an element that, by very definition, cannot be calculated upon, and the best we can do would be approximation, nor would we know even the degree of that.[11]

The concept of determinism, then, is a necessary and basic assumption in the study of psychology; without it we would not be in a position either to understand, control or modify, for the assumed incalculable element would always be there and we could neither measure its degree nor allow for its direction. To be sure, we cannot prove, directly and concretely, irrevocably and finally, that there is no such incalculable factor, and it is therefore obviously a necessary assumption without which we could not even pretend to proceed to a scientific investigation of human behavior. But it is worth noting that psychology as a science shares this assumption with other sciences, for were the chemist or the physicist or the biologist to admit the existence and the activity of an unknown, unknowable and incalculable factor, the results in these sciences, too, would be clouded with uncertainty and rendered inaccurate, predictions made impossible and applications uncertain. There are still other psychological assumptions, some of them common to the sciences in general as sciences, some of them peculiar to the particular science of psychology, but it will be better to return to a consideration of these after the fundamental matters of the succeeding chapters; the so-called "body-mind" problem being one of the most important, though there are a host of others which will make themselves evident as we advance in the subject.

[8]

The Field of Applied Psychology. Psychology is, always and everywhere, psychology. The distinction between various divisions and sub-divisions of the field is a purely practical one, not involving differences of theory at all. Thus, what we call, perhaps not too accurately, educational psychology is, at bottom, psychology, the point being that it is psychology interested in the particular problems and the particular details of how to learn, how to teach, and all the associated problems that arise in that field of research. Crowd psychology, social psychology, the psychology of religion or aesthetics, the psychology of sub-normal children, the psychology of business and advertising, in so far as they are really psychology are based on the fundamental prin-

[11] See, on question of assumptions in general, Moore, J. S., Ch. VI; Weiss, Chs. I to III; Bentley, Chs. I to III; Sidis, Chs. I, V, XII and XVII. See also, Barry, Ritchie in general; Moore, D. T. V., Ch. I; Sidis, Chs. I to VI.

ciples of that science and each such special field merely emphasizes the facts and the problems lying in the particular domain in question. No new theories arise which are not, at one and the same time, and even more fundamentally, new theories in the general field of psychology as the science of human behavior.

Similarly, the distinction between "applied" psychology and what is so often but not so wisely called "pure" psychology is the same as that above, namely, a distinction in emphasis, points of interest and the like, plus a concern in the former for actually bringing about the changes which the more general and theoretical aspects of the subject, based on scientific procedure, have demonstrated to be possible. Thus, in applied psychology we are interested in how to produce changes as a practical procedure, whereas the general body of psychological knowledge is perhaps more apt to state merely what changes can be made and under what conditions. The same antithesis and same agreement exists in the case of science in general; "pure" as contrasted with "applied" chemistry does not involve different facts or theory, but merely an emphasis, in the latter case, on actually doing, in a concrete situation, that which scientifically has been shown to be possible of accomplishment. But the science is still science when applied, and if the attempt at application and concrete performance denies or contradicts the basic facts, the application ceases to be science in any reputable sense of the word. But this, too, will be considered further in the summary chapter of this Section of the book.[12]

[9]

Summary. So far, then, we have discussed the barest bases of our treatment of the science of human behavior, leaving it to the remaining chapters of this Part I to establish some of the details of fact, experiment and observation on which the present science rests. We have, tentatively, and with the understanding that the evidence for the statement must be forthcoming, defined psychology as the science of human behavior in the largest sense of the word behavior, the sense which includes all that human beings do, all that human beings have. In this sense of behavior, it is the behavior of the whole, integrated personality which is under investigation and, while it will first be necessary to analyze and to investigate what might be called the 'atoms' of behavior,

[12] See references to Note (8) above. Also, the introductory chapters to current "applied" psychologies, such as those by Poffenberger, Meyers, Strong, Snow, Ewer, Drever, Kitson, Watts, Laird, etc., in various fields. See also, Ogburn and Goldenweiser; Weld, particularly Chs. II to VI and XV.

it will ultimately be found necessary to again stress the personality, the integration aspect of human conduct, human behavior as a synthetic and dynamic adjustment.

It has been shown that psychology, as a science, assumes what other sciences with different fields of interest also assume, namely, determinism, for unless we assume, (such assumption to be checked up with the results of experience and investigation), that human conduct can be explained in terms of observable facts, we frankly acknowledge, at the very beginning, that there can be no such science, an acknowledgment, indeed, which many a philosophy and religion has made and even insisted upon. It has also been shown that psychology, as the science of human nature, is related intimately to other sciences, both as dependent upon some and having others dependent upon it, in the sense that some facts are first isolated and their significance seen in fields not emphatically psychological, or that some facts in larger fields of investigation call for the explanation which psychology, as the special science of human behavior, is alone in a position to offer.

Still further, it has been shown that psychology is emphatically, like all other sciences, ultimately interested in application, manipulation and control, and that between such an emphasis on control as contrasted with the emphasis on the knowing-how-to-control there is but a verbal distinction. Incidently, it was pointed out that psychology, in so far as it is actually scientific knowledge of human behavior and not mere speculation, is a unified domain of knowledge, though in the interests of practice the field is often split up into special sub-divisions of particular interest but, always and everywhere, what is actually at issue is the general science of human behavior as applied to some special and isolated problem or situation. And, finally, it was pointed out that many of the existing divergencies in psychological theory are due in part to over-emphasis of some particular interest or concern, in part to the operation of ulterior motives, in part to sheer ignorance of all the facts; in short, what we call the various schools of psychology are such largely in virtue of the fact that the science is yet young, that many of the facts, perhaps even a large percentage of the facts, are not yet known, so that there is still room for such divergences of theory as make for what we have called schools, but that further and better established facts will make, consistently and continually, for greater agreement exactly as it has in other sciences. It will, however, in order to show the details of this process, be necessary, next, to investigate the facts at issue, those facts namely, which

show the structures involved, their specific functioning, and the inter-relationships of such structures and functions.[13]

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[13] The reader will note that, as succeeding chapters are added, topics previously discussed frequently are treated again from new and more inclusive points of view. Direct cross-references have frequently been made. The plan of the book calls for just such increasingly detailed and integrative treatment of the various topics; Part I dealing with fundamental biological approaches and explanations, leading to a final dynamic consideration of human behavior; Part II dealing with the mechanism of intelligence; Part III with the personality as a whole, and Part IV particularly with types and methods of personality adjustment. It is inevitable, as we have said, that various topics dealt with from a purely physiological or biological point of view in earlier chapters will need additions and modifications from later more summary and more all-inclusive approaches, but in no case is there any change in statement but that/of addition; the conclusions of each chapter, while partial, are bases on which later additions are made.

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Note: The various foot-notes and bibliographies of this text refer the reader desirous of further information, greater detail, or other points of view, quite exclusively to other books. This emphasis on other books to the exclusion of current magazine literature is due to the fact that books usually present a more matured, a more complete and a better balanced point of view and exposition. The magazine literature is often partial and preliminary, incomplete and unrelated to fundamentals. The reader, however, who is desirous of consulting current research and contemporary opinions, is advised to pay particular attention to the following magazines:

The American Journal of Psychology
Psychological Abstracts.
The Psychoanalytical Review.
Journal of Abnormal and Social Psychology.

References to the material in these periodicals is facilitated by the use of the recently issued Index for the *American Journal of Psychology*, covering Volumes I to XXX, i.e., 1887 to 1919, and a similar Index for the *Psychoanalytical Review*, Volumes I to XII, i.e., 1913 to 1925. *Psychological Abstracts* also issues a yearly cumulative index, and is itself really a catalog of books and magazine material, in both English and foreign languages, briefly and descriptively reviewed.

CHAPTER II

THE BIOLOGICAL BASES OF PSYCHOLOGY

1. The Relation of Structure and Function. 2. The Receptors: Their Nature and Classification. 3. The Connectors: Simple and Complex. 4. The Effectors: Muscles and Glands. 5. Stimulus and Response as a Program. Bibliography.

[1]

Structure and Function. We are committed in this book, it will be remembered, to a definition of psychology which makes it the science of human behavior, and to assumptions underlying or paralleling this definition which stress the causal factor in human conduct and which deny that there can be any human behavior without an adequate, concrete physiological structure as a basis for it. Many earlier psychologies, and some contemporary schools, admit various entities, powers and faculties which, by very definition, have no material or structural basis. This is here definitely and completely denied; where there is activity, behavior, conduct, performance, it is the activity of some definite, investigable, measurable, observable structure. To be sure, at the present stage of concrete, experimental investigation and knowledge, it is not always possible to satisfy this fundamental assumption completely and directly, but even where assumptions and hypotheses are used, it is always with reference to such final underlying structures, and in no case is activity here thought of as free of some structure. We may only guess at the structure, we may have the wrong structure in mind, we may be quite unable to see what structure is involved, but behavior is always and everywhere referred to structure, actually known or in process of becoming known.[1]

[1] In order adequately to understand and to be in a position to later apply such understanding of the biological bases of human behavior to the more complex problems and fields, it is absolutely necessary to study more detailed treatments of the knowledge involved, preferably in the books of first hand investigators and writers. Furthermore, such cuts and plates as might have been introduced into this chapter would, at best, have touched on merely some aspects and some details of a very complicated and tremendously large field of research. What is here given as summary is merely for the purpose of building upon, and must be supplemented by further reading. It cannot be too strongly urged that the student have constantly at hand, during the reading of this and subsequent chapters, either

In the case of sensations, we can and do easily refer to sense organs; in the case of emotions, we now refer to glandular and visceral bases where once there was little or no reference to any structure; in the case of habit, memory, thought, and any and every species of behavior discussed in modern psychology, such a definition as we have adopted requires the finding of a structural basis for the activity in question. This program is, on the whole, more faithfully adhered to by modern introductory texts in general psychology than by those which go afield to the applications of the principles of general psychology to this or that matter of interest in education, art, religion, or the abnormal, business, advertising or salesmanship. In these applications of psychology, keeping in mind the concluding paragraph of the last chapter, it is easily seen that more laxness is present and, indeed, unavoidable in the present state of knowledge. Here, as far as possible, every effort will be made to relate whatever behavior is being discussed to some fairly definite structure, even though such structures may, as yet, not be known as exactly as, say, the sense organs. We cannot, for example, in exact detail, point out just exactly what structures are and what structures are not involved in the poet's fine frenzy, in a flight of the fancy, in a prayerful attitude, in a mood of hilarious joy or in a spirit of despondency, but we can and do insist that such phrases as the above are conventional, picturesque, figurative, and that each such behavioristic performance does have a real and substantial structural basis, even though we cannot point it out in detail. Furthermore, and this is perhaps a wise time to introduce the point, very few acts of behavior have a definite, simple, isolated structure; most, if not all behavior, apart perhaps from the simplest reflexes, is the behavior of very complicated structure, so that it is better, usually, to think of behavior in terms of the relative activity of many and varied structures, co-operating, in differing relationships, to bring about different types and acts of behavior. Man is what he does; and what man does he does as a man and not as a conglomeration of isolated and independent structures all rammed together into his containing envelope, the skin. The point will be emphasized in more detail later, but it is well here to get the concept of integrated and unified activity

Herrick's *Introduction to Neurology,* or Dunlap's *Outline of Psychobiology,* or both. For each section or topic in this chapter detailed references to both these books will be given though other and supplementary references will also be listed. Also, a model of the brain and upper section of the spinal cord, such as type Y46, supplied by the Denoyer-Geppert Co., of Chicago, is of immense value for the understanding of the structures involved.

clearly in mind, lest we stray into the purely physiological field and miss psychology altogether for, as was tentatively indicated in the introductory chapter, the final significance of a science of human behavior is a science of human personality.

A human being, then, from our present point of view, is a structure, very complex, susceptible of stimulation from the environment capable, in turn, of responding to and modifying that environment, and having the ability, also, to sort out, to organize, to digest, the stimuli and responses, so that behavior may be delayed or immediate, may be in terms of one or many stimuli, and may involve simple or highly complicated responses. Naturally, age, sex, degree of culture, the type of education the individual has had, the main interests, health and energy, social position and economic status will result in greater susceptibility to certain stimuli, greater probability of certain responses and will, also, account of the kind and the complexity of connections and habits and the emotional patterns, but all individuals, regardless of such purely individual or typical conditions, will receive stimuli, make internal connections, and give responses. We will now consider each of these in turn.

[2]

Receptors. There are a great number of specialized structures, commonly called sense organs, but more properly thought of as receptors, whose function is to receive, at first hand, the stimuli of the external environment in which the human being lives. At the moment, our interest lies in these organs as receivers and transformers of the physical energy of the environment, which physical energy may take the form of heat, light, sound waves and so on, but care must be taken not to understand these facts in too simple or too narrow a sense, for while stimuli are thus received as stated, human beings do not, apart from a hypothetical simple beginning state, respond to such simple stimuli but to more complex situations and to what we will deal with later on under the heading of "meanings". But, as receptors, these receiving devices are, through their structure, attuned to receive and to transform the specific energies of the environment which, as stimuli, impinge upon the receptor. What happens subsequently to such reception will be considered under the heading of "connectors" and "effectors".[2]

[2] Herrick, *Introduction*, Ch. V, *Foundations*, Chs. III and IV; Crile, Chs. II to VI; Weiss, Chs. VII; Bentley, Chs. II and III.

Receptors, being highly specialized organs, are each susceptible to specific stimuli and not to others; the eye receives light, the ear sound, and each, as such, is insensitive to the stimulus which affects the other. To enumerate the full list of different receptors would, as present knowledge goes, be impossible, but many more can be named and described than the conventional five. Classifying the receptors, we find one main group which is called the somatic, consisting of such receptors as are found just beneath the surface of the skin, on the surfaces of the bone joints, in the muscles and tendon attachments, or in cavities in the head, as in the case of the ear, the nose and the eye. The second main group of receptors is that called the visceral, consisting of specialized structures located in, on or near the actual visceral organs proper such as the stomach, kidneys, lungs, heart, intestines, bowels and the like. While this section is primarily concerned with receptors, it is worth noting here, as preparatory for the treatment of effectors later on, that the responses to activation of the somatic receptors are, on the whole, overt adjustments to the environment, leading to the removal of the organism from the stimulus, or toward it, or modification of it, or to some overt response involved in its meaning, while responses to the visceral receptor activity are movements of viscera, glandular activity, changes in circulation, breathing, heart activity and similar behavior. Roughly speaking, and allowing for later more exact statements, the somatic receptors are involved in deliberate and intelligent behavior, the visceral in emotional and feeling-tone responses.

If we further divide each main group, somatic and visceral, we can classify some of the somatic receptors as "exteroceptors" and some as "proprioceptors". Thus, the exteroceptors are the eye, the ear, and the olfactory epithelium of the nose (the distance sub-group), and the specific organs of touch and pressure, of heat, cold and pain (the contact sub-group). The other sub-division of the somatic receptors, the proprioceptor group, comprises the organs of balance and position, and the end organs in muscles and tendons and joints. The other main group of receptors in general, the visceral, also called interoceptors, comprises the sense organs of taste, smell (also an exteroceptor, as above), nausea, thirst, hunger, circulation, sex, respiration, and other as yet indefinitely named or understood sensations. The exteroceptors receive their stimuli from without, the proprioceptors from the movements of the muscles themselves, and the

interoceptors in relation to movements and changes, as stated, in the viscera.[3]

Naturally, this division, like many classifications in the biological sciences, does violence to the facts in several ways or, rather, makes too separate and too distinct the elements of what is, actually, a more complex situation in which analysis finds the above emphases and relative distinctions. The organ of smell, for example, is an exteroceptive-distance organ in so far as odors lead to muscular changes in the effort to bring the organism nearer to and in contact with food as a source of the odor; it is also an interoceptor in that changes take place in the viscera in terms of the odors, pleasant or unpleasant, which objects give off. The proprioceptors, too, while they are not in contact with the external environment, function together with the exteroceptors, in orientating the organism and bringing about overt changes of place, posture, movement and the like. The proprioceptors are thus, in a sense, allies or adjuncts of the exteroceptors. Furthermore, as regards the true interoceptors, those specialized structures, namely, which are concerned with stimuli originating in conditions of the viscera and whose functioning, we have said, is directly concerned in emotional and feeling-tone situations and behavior, the only ones of which very definite knowledge exists are those concerned with taste and smell. While we can roughly identify many other sensations having an undoubted internal, visceral origin, we cannot exactly locate or identify the functioning structures involved in the reception of all the stimuli, though the stimulus itself is easier to identify. But the receptors constitute only one aspect, as we have said, of the three-fold activity circuit of the organism, which circuit, from stimulus to response, is the real unit. Receptors, connectors and effectors alike have one co-operative function; that, namely, of adjusting the organism to the environment or to a situation, and while each portion functions in a special way, each such functioning has its significance only in terms of the co-operation and co-ordination of the others. All this last, of course, is from the point of view of the external spectator, the scientist or experimenter, for in terms of the activity of the actual structures, as such, there is simply physical and chemical and perhaps electrical activity, and "purpose" or "co-operation" or "co-ordination" are not terms that can properly be used in describing these structures or their activities as such.[4]

[3] As above, for Note (2); also Herrick, *Foundations*, particularly Ch. III and classification at end of chapter; Dunlap, Ch. IX; Bentley, as above.

[4] See Herrick, *Foundations*, particularly Chs. I and V; Weiss, particularly Chs. I and II; Crile, Ch. I; Bentley, as above.

[3]

Connectors. Again, as in the case of the receptors, we have a complex situation, involving divisions and sub-divisions. The nervous system, as a whole, and speaking all-inclusively, is made up of two co-operating but distinctly different portions, different, that is, in origin, function and organization, though the two parts do, none the less, form a true unit. One main division, called the cerebro-spinal nervous system, is sub-divided into peripheral nervous system (afferent and efferent nerves leading to and from the brain and spinal cord), and the central nervous system, (the brain and spinal cord); the other main division, called the autonomic nervous system, is comprised of the three sub-divisions, the cranial, the sacral and the sympathetic, so related that the functioning of the sympathetic is contrary to that of the other two. These two main divisions, cerebro-spinal and autonomic, are connected at many points, so that the functioning of each can and does affect the other. Also, it must be clearly understood that the cerebro-spinal system includes the exteroceptive receptors and their reflex circuits and inter-connections, whereas the autonomic system consists of connections with the (visceral) interoceptors and their reflex circuits. On the whole, then, the cerebro-spinal system is concerned with overt activities, muscular adjustments to the environment, and the autonomic with emotions, feeling tones and what will be treated of later as drives. But, as we know from common sense and experience, emotions also affect our crude overt adjustments to the environment, so again it is, in a sense, a violence to the facts of human behavior to separate too rigidly or too sharply the functioning of one part of the nervous system from the other. It cannot be insisted upon too often or too loudly that the organism, in so far as it is just that, an organism, receives a stimulus and effects a response as an organism and not as a collection of separate and independent organs.

But to say that the nervous system as a whole is made up of the cerebro-spinal and the autonomic sub-divisions leaves unsaid much else that is vital to the understanding of our program of psychology. To come back to receptors, the energy which activates them and which is transformed by them into some other form of energy (probably electrical and chemical, for CO_2 is liberated), is then transmitted over nerves to various re-directing centers, whence the impulse is again sent forth to accomplish the final act in this full reflex circuit, namely, to activate the muscles

or glands, as the case may be, or both. Nerves leading from receptors to centers are called afferent (sensory) nerves; those leading from centers to muscles or glands are called efferent (motor) nerves. A receptor, its afferent nerve, a center, and the efferent nerve together with an effector,—gland or muscle cell,—constitute a unit called a reflex circuit or arc. In this sense, the brain itself, commonly thought of as the seat of thought *par excellence*, is merely an important part of such reflex circuits; indeed, it is simply that part of the nervous system in which, together with the cord, all connecting centers are located, with the exception of those concerned with visceral situations which, as has been said, belong to the autonomic division.[5]

It will be well, next, to consider the nerves themselves, as types of specialized cells, though again it must be remembered that all this analysis is purely theoretical in that nerves are nerves in contrast to other cells, and that each specialized part of the organism can perform its special function only in connection with the proper activity of the other related parts. The nerve cell or, more properly, neuron, is a microscopic structure, comprising a cell body together with what are called dendrites and an axon. One neuron usually has many dendrites, a bushy growth of relatively short projections from the body, though only one axon, the latter sometimes extremely long, often with terminal arborizations, that is, branch-like subdivisions of its structure where it joins on to muscle or gland. The dendrites of one neuron receive the nervous impulse energy from the terminal aborizations of another neuron (never the reverse), through the synapse, the name given to such points of contact or semi-contact. These points of contact or semi-contact, the synapses, are theoretically believed to be involved in the making of permanent pathways through the nervous system from receptors to effectors; frequency of use, and other factors, determining the establishment of such paths, which then become relatively permanent circuits. But the point to be clearly understood is that there are preferential paths for any given impulse once a habit, of any kind, has become established, and by habit all we need mean here is that for a given stimulus or situation there results, on the whole or usually, a fairly definite, simple or complex response. Prior to the establishment of such preferential pathways, it is theoretically possible, in the absence at least of evidence against the conception, that several neurons, through their respective axons, may dis-

[5] Herrick, *Introduction*, Chs. VI to X and XIX to XXI; Dunlap, Chs. VI and VII; Robinson and Robinson, Ch. III.

charge into the dendrites of one neuron, or one axon may discharge into the dendrites of several other neurons. Such a complex situation is sometimes called a center, if in the central nervous system, or a ganglion, if otherwise located. In the best sense of the word, the centers of the cerebro-spinal nervous system are located in the brain and cord, though the ganglia of the autonomic nervous system are distributed throughout the organism.[6]

Another conception often made use of in psychology, but involving some confusion, is that of "level". It is commonly stated that circuits involving merely a receptor cell, a sensory (afferent) neuron, its center or central connection where it is redirected outwardly, the motor (efferent) neuron carrying said outward going impulse and a muscle together constitute the simplest form of reflex arc or act, or first level reaction. The flow of saliva when food is placed in a young dog's mouth, the immediate and simple withdrawal of a limb from a pin-prick, are examples of such first level activity. When such acts become complicated by additional movements, such as rolling away from the offending pin, or shoving and kicking and squirming, it is said to be on the second level, and probably involves the mid-brain and the cerebellum. Third level reactions, responses or circuits involve the cerebral hemispheres of the brain and may be of any degree of complexity and are what we usually mean by deliberate, conscious, voluntary conduct, not using these words here in any critical or exact sense.

This necessarily leads to a consideration of the terms used above,—cerebrum, cerebellum, and their associated structures, the cord, medulla, and pons. To start with the spinal cord, this is a structure approximately eighteen inches long and some two-thirds of an inch in diameter, apart from its bony support, which has two primary functions,—conduction and connection. The nerves of the body join and leave the spinal cord in thirty-one double pairs; the afferent impulses from the sensory nerves enter the cord and are conducted up to the brain or to higher levels of the cord; efferent impulses from the brain and higher centers of the cord are conducted down the cord until they go out to their ultimate functioning over further efferent nerves, to muscles or glands or both. Secondly, as stated, the cord contains centers or connections or synapses between efferent and afferent nerves or neurons, probably through special so-called connecting neurons.

[6] Herrick, *Introduction,* Chs. II to IV; Dunlap, Chs. IV, V, and XI. See also, as below, for Note (7).

Afferent nerve impulses entering the cord are distributed to efferent neurons at the same, at a higher, or at the so-called brain level. Similarly, efferent impulses from the brain are distributed to different levels of the cord. The upper extremity of the spinal cord enlarges to form the medulla oblongata, containing special nerve centers that, in part, control breathing and circulation, known, respectively, as the respiratory and vasomotor centers. The medulla is also the point at which most efferent neurons from the brain cross to the opposite side of the spinal cord from that of their origin, though some such efferent neurons cross lower down in the cord. The cerebellum, located in the actual skull cavity, and resembling in some ways the structure of the cerebrum, particularly as regards its convolutions and fissures, is regarded, in general, as a co-ordinating mechanism for the muscular reflexes involved in balance and locomotion and thus related particularly to the proprioceptors, but there is much difference of opinion concerning its functioning. The cerebellum, like the cerebrum, has a cortex or rind, in which centers and synapses are located, while the inner portions of the structure consist primarily of masses of axons, both afferent and efferent, connecting with both brain and cord, and a second type, called commissural, connecting the two lobes of the cerebellum. These commissural neurons form the pons.

The greater portion of the skull cavity is occupied by the cerebrum, characterized, like the cerebellum, by fissures and convolutions, greatly increasing the actual area of the rind or cortex, and is also divided into two lobes or hemispheres. The cerebral cortex is a layer of synapses which, with some definiteness, are arranged into groups; thus, one speaks of the sensory areas, the motor areas and the associational areas. The sensory areas are the loci where the axons of neurons in the afferent pathway from receptors terminate, the motor areas send out axons ultimately leading, through various paths, to effectors, and the associational areas contain the cell bodies which connect various regions of the cortex, including the other areas. Much more detail can be given concerning the intricacy of the connections between portions of the cerebrum and between cerebrum and other portions of the nervous system, but our purpose here as will shortly be seen, is not so much to exhaust the descriptions of the neurologist and anatomist, as to find a basis on which we can build a program for the understanding and interpretation of human behavior. We will, therefore, leave the connectors or connection side of the organism for a moment and consider the effec-

tors, coming back to both connectors and receptors in a final summary consideration.[7]

Effectors. We may again mention the fact that receptors, connectors and effectors are, each of them, what they are emphatically in virtue of the reciprocal activity of each of them. While some schools and some emphases in psychology may be more interested in receptors, some in connectors (the associationists) and the dynamic school in effectors, it must constantly be remembered that there can be no reaction without initial action. An effect has its cause, just as much as a cause has its effect; we must appreciate action or behavior in terms of stimulus, and stimulus in terms of previous action. Response apparatus, as such, namely, the effectors, consists of muscles and glands and, as in the case of the receptors, has two main sub-divisions into somatic effectors or those working in connection with the exteroceptors and proprioceptors, and the other group, the visceral effectors, working in connection with the interoceptors, though, as stated, there are many cross connections and associative cooperations of the two sets through the interaction of the two main divisions of the nervous system, the cerebro-spinal and the autonomic.

The somatic effectors consist of the muscles of the body, the skeletal or striped muscles attached to movable portions of the body such as the mouth, eyelid or skull, or to the bones of the skeleton. Muscular responses are due to contractions of the muscle fibres subsequent to the discharge of the nervous impulses upon them, such discharges coming through the axons of efferent neurons, either directly, or through structures called end-plates. The muscle cell or fiber is the structural unit of muscle in the sense that the neuron is the structural unit of the nervous system, though thousands of such muscle cells are necessary to form even the smaller muscles in the more popular sense of the term. There are some 500 skeletal muscles in the complete somatic outfit, and they are characterized by two traits, in addition to those mentioned, namely, tonus and rhythmic activity. By tonus is meant that muscles are never in a completely passive or inactive or uncontracted state, but keep constantly a slight, varying tension which serves as a better basis for the more sudden action usually demanded of somatic effectors. Still further, this tension is not constant but, within probably slight degree, varies, that is, is rhythmic, the rhythm depending upon the additional fact that

[7] As for Note (5) above. See, also, diagrams in Warren, Chs. III to VI; Watson, Chs. III and IV; Ogden, Chs. III and IV; Schlapp and Smith, Bk. II, Chs. I and II.

the discharges of the efferent neurons upon the muscles are intermittent, themselves varying, according to some investigators, from forty to several hundreds of vibrations, for the same unit, for different neuromotor systems.

The visceral effectors are the smooth muscles, found in connection with the alimentary canal, the viscera in general, the bronchial tubes, the blood vessels, and the glands, duct and ductless, located throughout the body. The adrenals, upon the kidneys, the thyroid, in the throat, the pineal and pituitary in the head, are examples of the ductless variety of gland whose chemical secretion or hormone is discharged directly into the blood stream in its passage through the gland. The tear glands, the salivary glands, the sweat glands and others are, as contrasted with the above group, possessed of ducts which carry the secretions of the glands to body surfaces, inside or outside, or to body cavities. The muscles of the visceral effector system are smooth and, as contrasted with those of the somatic group, are usually more sluggish in action and have a more consistent tonus. The term "involuntary" is often used with reference to the smooth muscles of the visceral group of effectors and, while it contains some truth it is, as usually taken, not a full and proper characterization. If, by contrast, we term the somatic muscles "voluntary," we gain nothing for, in the light of the discussion on causality and determinism, it is readily seen that no act is voluntary in the sense that it has no adequate stimulus to set it off. But the opposition of these terms voluntary and involuntary perhaps has behind it the fact that, on the whole, the effective action of glands and visceral smooth muscles is not brought about as directly as the activity of the other group, is not subject to the same ideational control and modification. Thus, one can, when told, either lift or not lift the arm, depending on all the factors involved; one cannot, however, when merely told to become angry, or to shed tears, or to accelerate the heart, or to reverse peristalsis, either do so or control the degree of such activity. Nor, if such activities are set going by some adequate stimulus, can one, deliberately and ideationally, control the process.[8]

To be sure, many cross connections between neurons of the two divisions of the nervous system exist, and what we will examine under the heading of "conditioning" will treat this matter in detail, but when all is said and done there is a difference and a tremendous difference as regards the stimulus, the control and

[8] Herrick, *Introduction,* particularly Ch. V, and as above; also, Dunlap, Chs. III, VIII, and XI.

the activity in general of the visceral as contrasted with the somatic effectors. But both the duct and the ductless glands and their activities as well as those of the visceral muscles play an increasingly important part in the program of modern psychology, particularly in the field of the abnormal, that of art and religion, of education, and in what we call the study of temperament and personality. All verbal analysis, as has been remarked, leads or tends to lead to an artificial and inaccurate separation of the facts of the real and living organic situation; the human organism, like every organism, has become, through evolution and adaptation, a unified device for dealing with its environment and satisfactorily adjusting to it, such adjustment probably being statable in terms of survival, obtaining necessary food, having progeny, and the like, and only reasonably unified activity of the organism can or does make this possible. But this, of course, is frankly speculative, and we will return to it later with more definite statements on the matter, and with some support. It remains, now, to base a general program of psychological procedure on the basis of this very summary treatment and very generalized survey of the basic facts of receptors, connectors and effectors.

What we have discussed in this chapter is the biological basis or bases of human behavior. Structure is an important aspect of the study of psychology, because how we act, what acts we can perform, when we perform them, the situations or conditions which call them forth, the degree to which they can be modified, all depend, in part, on structure. To be sure, other factors enter in, education, training, ideas, ideals, but all these again, while they can and do modify or are the basis of the actual modification of conduct are themselves the result of previous experience, previous conduct, and ultimately go back to the simpler forms of behavior in the earlier stages of the life of the individual. In this sense, all conduct is, in the last analysis, based upon inherited structure; that is, on the nature, the make-up, the actual mechanical, electrical, chemical make-up of the organism before such modifications have occurred. To repeat somewhat differently what we have said before, an organism is a transforming device which changes the incoming energy of the environment, received through the receptors, into outgoing energy in the form of the work of the muscles and glands and, at the same time, as transforming device, also transforms itself in terms of these and other, inwardly originating stimuli, both sets of stimuli and both outputs of energy co-operating in the complete act or behavior of the organism.

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Stimulus and Response. All human conduct, then, in the terms of the lowest order, is matter in motion. The fact that the motions are complex, and that the matter is also tremendously complex, does not alter the situation. If psychology is to be the science of human behavior it must, as science, deal with concrete realities, and while, in a philosophical or metaphysical sense, both "matter" and "motion" are themselves open to analysis, this is not the concern of psychology as psychology. Putting this still differently, the science of human behavior endeavors to describe human behavior in terms of the energy input (the stimulus), the reception and transformation of such energy (the receptors and connectors) and its final output (the effectors). This is a longer way of saying that the science of human behavior seeks to reduce all acts of human behavior to the formula S——R, where "S" stands for the stimulus, simple or complex, the dash for the connector patterns, and the "R" for the response, also simple or complex. In so far as we cannot point out the S which had led to a given R, or cannot point out the R which a given S leads to, or cannot, in either instance, point to the structure, neural, glandular or what not, involved, we depart from the definition which has been proposed as guiding to a complete and adequate knowledge of human behavior. Naturally, such a program as this is at present more honored in the breach than in the observance, for we actually do not have the requisite knowledge, have not performed the necessary experiments; indeed, in some cases, cannot perform them and do not always see how they could ever be performed. But such is the necessary attitude to make psychology the science of human behavior, and where knowledge is lacking, the problem is to supply it rather than to merely bemoan the lack or to indulge in substitute pseudo-scientific explanations which lead nowhere except to the satisfaction of the special interests involved. Particularly is the lack of "S——R" treatment observable in the field of the abnormal, in art, religion and such highly complex and "philosophical" fields; but such lack of precision in these fields merely means that more work will have to be done, and all such conduct, just since it is human conduct and therefore within the field of psychology as a science, reduced to the formula.[9]

There is a current and constantly voiced lament that such a

[9] Crile, Chs. I, XV and XVI; Weiss, particularly, Chs. I to III and XVII; Herrick, *Foundations,* Chs. I, II and V, *Brains of Rats and Men,* Chs. I, II and XVI to XIX; Parmalee, Chs. VII to X.

treatment of human affairs and human behavior robs it of all spiritual significance, or that such efforts of a science of psychology can never deal with the spiritual activities of man, and that therefore psychology is limited to lower and less important matters. All this is really beside the point; in so far as a thing or an activity is human, it is human conduct and therefore observable; if extraneous and ultra-human, or supernatural and transcendental elements enter which, by definition, are not human, then naturally psychology cannot deal with them. We may not be able to write the psychology of God, but we can write the psychology of the godly man; we may not be able to tell the psychological nature of ghosts or spirits in the conventional sense, but we can tell the story, in psychological terms, of those who believe in them, react to them, behave in terms of them. In other words, we cannot tell what a human being would be like and what laws his conduct would follow if he is supposed not to be a human being! But, from our point of view, all that man thinks, does, says, hopes, wishes, dreams, aspires to, is afraid of and reacts to with scorn, hatred, fear, lust, envy or love, is subject matter for the science of human behavior and can be described in terms of S——R. The next chapter will be concerned, then, with the further details of this program, showing how a given S becomes joined, in behavior, with a given R and endeavoring also, so far as present knowledge or reasonable decent speculation permits, to describe what bonds and connections lie between.[10]

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[10] See, particularly, for presentation of this point of view, Parmalee, Raup, Loeb, Crile and Weiss.

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(Note: It is imperative that the student, for the proper understanding of all that is involved in this chapter on the "Biological Basis" should have constantly at hand either Herrick's *Introduction to Neurology,* or Dunlap's *Outline of Psychobiology,* though preferably both. In case these are inaccessible, or for a lighter summary treatment that is well illustrated, see Warren, H. C., *Human Psychology,* Chapters II to V inclusive. See, also, reference to brain model, in Note (1) of this chapter.)

CHAPTER III

THE PSYCHOLOGICAL LEVEL OF BEHAVIOR

1. The Integration of Behavior. 2. Original versus Acquired Behavior. 3. The Question of Heredity versus Environment. 4. Substitute Responses and Substitute Stimuli. 5. The Conditioning of Behavior in General. Bibliography.

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Integration of Behavior. The very phrase "integration of behavior" immediately denies that the objective, scientific psychologist aims at reducing human conduct to psychological atoms, even though such things may, theoretically, be discussed. The earlier speculations of the Greeks anticipated, theoretically, the modern atomic hypothesis of matter to some extent, and earlier speculative psychologies, following the same analytical trail, arrived at what might be called an atomic hypothesis of human behavior. Modern psychologists, to the degree that they ignore or deny the complexity of stimuli which lead to equally complex responses and which have between them extraordinarily complex structures of the connective system, do violence to the facts. Mental life is not based on simple so-called "sensations," nor is thinking merely the activity of associated neurons in the cortex. However much we may analyze, and we should constantly do so, it must never be forgotten that human behavior, even when it appears simple, is profoundly complex, in the sense, that is, that the S and R and the bonds between are complex and that much has gone into the situation that was not there when the organism was younger, less experienced.

First, to consider some simpler aspects of this complexity, under the general heading of association in the technical structural sense, may be mentioned correlation and coordination, the former referring to the fact that many afferent impulses may be and usually are, in all but the simplest acts of conduct, brought to a focus, probably in the thalamus, somehow united and correlated, before they are handled by motor centers and issue as conduct in the overt sense. Coordination refers to the complementary fact that, ordinarily, nerve impulses are discharged, not just along one efferent motor path, but along such a group of paths that the resultant overt behavior is finely suited to the needs of the organism in the situation, and not hit or miss,

spasmodic alternations of muscle acts. This means that any given R is often as much in terms of other previous R's or S's as it is in terms of the S at the moment, and also that no S or R must be seen too narrowly. That is, while we may and do say that the S for a given response is to be a certain auditory stimulus or touch, actually the S will be not merely that auditory or tactual stimulus, but the whole situation in which it occurs, the purposes which are forward at the moment, the memories which are recalled in connection with the S and related situations, the habits which will or could function, all of which words,—purposes, habits, memories,—represent connective modifications due to previous experience and previous S——R situations. This is one way of describing the so-called modern Gestalt movement which, while it is sound, valuable and indeed necessary, is not as new as some of its proponents would have us believe. It is a contemporary re-emphasis of facts which have been known for some time; correlation and coordination, in the sense in which we have discussed them above adequately cover some of the contentions of the Gestalt school.

Associated with the above, are what are called facilitation, inhibition, and reciprocal innervation. By facilitation is meant that when two or more stimuli, each having a similar influence on a common effector, are received at the same time, each facilitates the other, so that the response is more vigorous than would have been the case with either one of the associated stimuli alone. Even apparently unrelated stimuli may bring about this result, as in the case of increasing the grip on a dynanometer, or the registration of cubic lung capacity, by means of an auditory or touch or pain stimulus given at the same time. Inhibition is the reverse, that process, namely, whereby one stimulus will weaken, retard, or entirely inhibit the response to another concurrent stimulus. What is called reciprocal innervation refers to the fact, in the case of muscles antagonistic in their effect on motor adjustment, that when one of such opposed sets is stimulated there is also a definite inhibition or innervation of the activity of the other set. While much experimental work has been done along these lines, the complete chemical and mechanical explanation is not yet certain.[1]

[1] On integration in general and its details, see: Allport, Ch. II; Bentley, Chs. IV and V; Herrick, *Foundations,* Chs. XVII to XXI, *Introduction,* Chs. I and II, *Rats and Men,* Chs. I, II to V, XII to XIV; Meyer, Chs. IV and VII; Ogden, Chs. III and IV; Robinson and Robinson, Ch. III; Taylor, Ch. V; *Adjustmental Organization,* Warren, Chs. IV and V; Weiss,

Behavior, then, even though always in terms of S——R, is highly integrated. The justification of the heading of this chapter as the "psychological level" as contrasted with that of the preceding chapter, the "biological bases" lies partly in this fact of integration. Indeed, in a sense, biology and psychology, as separate sciences, divide on just this line of demarkation, psychology proper beginning where biology proper ends, the latter concerning itself primarily with structure and native responses, the former with learned responses and the modification of structure through use and experience, though the two constantly overlap both in technique and content. One might say that the mere process of living, in whatever situation or with whatever original endowment, is a process of making more and more complex R's to more and more complex S's, with a concurrent growth in the complexity of the bonds between them, till such time as the organism ceases to grow further and actually declines toward a different simplicity of disintegration. Naturally, each individual, in a sense, specializes in acquiring different complexities, some activities in every individual, and still others in all individuals remaining comparatively simple and much as in the beginning of that individual's career. This is to say that, while biology will still always and everywhere be needed to account for the beginnings and for unmodified structures and responses, it is in part the province of psychology to sort out which activities, which S——R circuits are native, which remain more or less unmodified, which receive the most modification and under what conditions, to which problem the investigation will now proceed.

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Original versus Acquired Behavior. These words, "original" and "acquired" have, like many of the terms used in the traditional medieval disputes, been the source of infinite misunderstanding. Much depends on how one defines them, and since definition uses still other words, they may remain unclear even after considerable discussion. Certainly, whatever one finally decides about the meaning of the terms, there is one sense of the word native which covers the fact that all behavior, no matter how complicated, delayed, important or socialized, is based on original behavior, i.e., on the reaction of the original, inherited structure of the organism to its first habitat, physical and social.

Ch. VIII; Crile, Ch. XVI; Koffka, Ch. IV. See also, for summary treatment of mechanisms the somewhat popular presentation in Schlapp and Smith, Bk. II, especially diagrams.

That is, however much an individual learns, however much he becomes modified from what he once was, it is still partially in terms of that "once was." On the other hand, however rich we wish to make the original, inherited structure and functional capacities of an individual, we must also acknowledge that his present conduct was once different, that what he has gone through, what he has experienced, has made changes; that there is now something which at one time did not exist and could not be, as such, exhibited.

But, while it is worth while getting this conception of the related meanings of the two terms clear, it will not do to cease there. The question of native versus acquired may be phrased in two ways, namely, What is native in the sense that experience has contributed nothing to it at all? Or what is native in the sense of what was there before the process of experience overlaid it with a deposit of acquired abilities? This second question is not so easy to answer as the other, and behind the effort to answer it lies a vast mass of experimental and speculative work. To attempt to list very concrete acts as native is dangerous and assumes too much knowledge at the present state of the science. Thus, most cats hunt mice, most dogs hunt cats, most adults walk upright, most people speak a language, but we should not, therefore and on no other basis, decide that for cats to hunt mice, dogs to hunt cats, and humans to walk and talk is native. For it is sure that we learn to walk and talk, and that cats learn to hunt mice, and dogs to hunt cats, and that the individual performances in all these things depend, to a very large extent, on opportunity, teaching or learning; in a word, practice. Various criteria for the deciding whether a given act is native exist, such as its functioning immediately upon birth, or at a certain more or less definite period after birth with no opportunity for learning, or that it is characteristic of a group or species to an extent that cannot be accounted for otherwise. Of all these three, the first is the most sure and least open to error; what functions immediately upon birth, ignoring, to be sure, the possible effects of experience during the period of gestation, is native in the sense that it is not learned or acquired. All this consideration of what may seem an unimportant point is really necessary, not only from the point of view of a descriptive science of human behavior, but particularly from the practical and applied point of view, as will be seen when we consider the larger aspects of this question under the heading of heredity versus environment. The antithesis of native and acquired is, as should be already clear, another example of the apparently necessary artificiality

which analytical science forces upon the unified and smoothly flowing facts of life, nature and experience. How can the effects of experience ever be entirely separated from those that were there prior to that experience? It is clear that our best results will be to sort out those emphatically native from those emphatically acquired, leaving a sort of hazy hiatus where the two merge.[2]

But, taking our first criterion above, it is clear that the human organism comes into the world able to be stimulated, that is, subject to the stimulating energy of the environment, via its sense organs. The visceral organs come into the world already functioning, the muscles capable of movement, and some connections between some sense organs and some muscles already established. Thus, the receptors, the connectors and the effectors are able, apart from experience, to function, to go off, to behave, ignoring again that aspect of life which is beginning to receive more attention, namely, the pre-natal period of gestation during which the organs and structures mentioned are developing from the original fertilized ovum. Thus, to re-state the above conclusions differently, the human organism comes into life and experience with the sense organs ready to function, with the effectors likewise ready to operate, and with some connections already structurally coordinating with the two. What colors the child will see, what sounds he will hear, will depend on the environment; the way he will natively and apart from learning react to them will depend, on the basis of our stated position, on the connections already existing between the receptors and effectors, such connections, however, becoming immediately susceptible to modification, change, increase in complexity, inhibition, and in all the other ways that involve experience and learning. Thus, to specify some native circuits involving receptors, connectors, and effectors, consider the act of swallowing, or sneezing, or pulling the arm or leg away from a stimulus which produces pain. The receptor cells are already, prior to and apart from experience, linked up with a portion of the connective system, which results in the afferent impulse going out as an efferent impulse along motor lines which produce on the whole and apart from complicating conditions, the proper motor reaction, proper, that is, from the point of view of normal conduct and survival.

[2] For discussions of Original and Acquired traits, see: Koffka, Ch. III; Watson, *Psychology*, Chs. VI and VII; Taylor, Ch. V, (*Some Fundamental Activities*); Robinson and Robinson, Ch. IV; Ogden, Chs. VI and VII; Meyer, Ch. VIII; Allport, Ch. III; Thorndike, Chs. I to IX, particularly I to III; Hunter, Pt. I, Ch. I, Pt. II, Chs. III and IV; Woodworth, *Psychology*, Chs. IV to VIII, *Dynamic Psychology*, Chs. III and IV. See, also, for general discussion, Drever, and Edman. Confer chart on p. 106 of Watson, *Behaviorism*.

It is true that such native circuits can and do become tremendously modified; thus the child may come to swallow only under some circumstances, or to swallow only certain foods with certain tastes, or may come, later on, to sneeze "artificially," or as a neurotic symptom, or may learn to inhibit the pulling away of the arm or leg from an offending stimulus, but this is clearly all to be brought under the heading of learning or acquired traits. The point is that there are some definite, unlearned S——R circuits present at birth, however much they may and do become modified afterwards. But, to anticipate a much later point, are such types of conduct as are roughly called, say, hysteria, manic-depressive insanity, and the like, native traits or inherited structures showing themselves late in life, or are they, on the contrary, learned forms of behavior, capable of being thus learned by anyone adequately taught thus to react? This is not an academic question, for unless the mass of speculative material of the various fields of applied psychology is reduced to terms of agreement with fundamental facts, it remains merely speculative and for all practical purposes useless or ornamental. Here, also, must be noted the fact definitely established by experiment that, as is the case with sense-organ circuits, leading to activity of the muscles of the striped variety, so also in the case of circuits involving the interoceptors, (plus or apart from the exteroceptors), and ending with the activity of the unstriped muscles and the ductless glands, there are connections existing apart from experience and definite patterns of behavior that operate without learning. Thus, the child learns to show fear (as a type of response) in connection with some definite thing or things, but does not learn or need to learn how to react fearfully. He is equipped to show what the adult calls anger, though again what he becomes angry at is a matter of learning and experience. The structure for such reactions is there and can function without learning or training. Fear and anger, as typical visceral reactions, are as native as swallowing or sneezing are in another realm. Whether overt acts, such as running away, struggling with a threatening opponent and the like, should also be included in the list of these native reactions remains for further discussion, but certainly chemical disturbance involving the activity of the ductless glands plus associated reactions, muscular, respiratory, circulatory and so on, which are the basis of what we call the emotions, are native in the sense that, while experience modifies them, while they may be called forth by S's which become attached to the circuit by experience, as simple original reactions they are unlearned.[2]

So far, then, we have included, in what we call the native equipment, circuits involving receptors, connections and effectors of two distinctly different kinds, first those in the main involving the exteroceptors, proprioceptors, the cerebro-spinal nervous system and the striped muscles and, secondly, those involving the interoceptors, the autonomic system, the unstriped muscles and the ductless glands, not forgetting, of course, natively existing connections between the two. These are all mechanisms, structures, existing as such and ready to perform upon birth. Some writers would want to add a third group of native structures, that involved in the final development, through experience, of distinct gifts. Thus, to take the simplest and broadest instance, the fact that a given individual develops what we later call intelligence would, under this conception, be based on a native structure of some sort which experience can and does develop. Or, to take other and lesser instances, such gifts as an "ear" for music, a "slant" for mathematics, an "aptitude" for mechanics or for salesmanship, would be held to be based on native structures. In terms of our previous argument, stating that all final developments are necessarily based on the original structures existing, this would be true; but it is at least open to argument whether such gifts, aptitudes or what not are, in any other or any special sense, dependent on any originally existing structures or are rather the result of special connections made by experience and involving not only connections in the cerebro-spinal but also the autonomic, that is, involving emotional connections as well as ideational. Certainly, at the present moment, we do not know what structures are involved in the ability to be a good salesman as contrasted with those involved in being a good mathematician, any more than we know what is involved, in definite detail, in super-intelligences as contrasted with average good sense. On the other hand, to follow some of the more radical opponents of this "gift" point of view and to claim that any child can be made by the proper training to acquire any ability is also unproven and theoretically just as open to doubt and criticism. But, also, just as certainly, there is no initial, early evidence for the trait of salesmanship or music as there is for the trait of being angry, turning the head when a sound or light is given as stimulus, withdrawing the arm or leg when a pain stimulus is offered. The fact is we do not know, yet, how much of such things is native, how much learned, and the whole subject is open to further, exact determinations of fact as opposed to present speculations and theoretical conclusions. The fact, real or apparent, that such gifts or aptitudes run in families is

no proof or disproof of their native basis; lots of things run in families which are not inherited or native; also, to base the conclusion that a trait is native on the fact that it runs in a family ignores the evident additional fact that such traits both begin to run in families and also cease so to run.

Another aspect of this idea of native equipment which is open to decided doubt, at least in the absence of definite evidence to support it, is that which holds for large native differences due to sex and race. Indefinite as is the concept of sex, and widely distributed in both sexes as are the uncritically so-called specific male and female traits, and though we know that careful training, deliberate and traditional, is responsible for many of the observed adult differences, some writers still place great emphasis on sex as a basis for a definitely different native equipment. To be sure, there are biological specific sex-structure differences, but whether apart from these major biological structures specifically involving sex behavior, there are, over and above, other great differences, apart from training, in the ability to remember, think, add, read, solve puzzles, assume authority, plan far reaching campaigns, understand abstractions, or in the field of emotional patterns and conditionings is, to put it fairly, still waiting for proof. In the matter of race the question is quite as dubious for, in the first place, no exact, mutually exclusive definitions of the assumed various races exist; secondly, no very exact and dependable tests have been made which take account of the third fact, namely, the variously and extraordinarily different environments, physical and social, actual and traditional, which serve as the background for the development of adult traits in the various groups and, finally, we have no real way of estimating and comparing traits existing in the individuals of these groups. To deny, in the face of present slight knowledge, that there are such specific differences in native abilities would be going, undoubtedly, too far in the contrary direction, but equally certain is it that merely to assume that there are differences and to attempt to list them on the basis of personal and purely qualitative observations, and without any checks back and forth, is not to deal with psychology in a scientific way. What one child of European birth becomes if raised from the very beginning in primitive surroundings, or what one child of so-called primitive racial origin becomes if raised from the beginning in an European environment, will not answer the question, nor will ten such cases nor yet one hundred. Nor does the fact that Europe surpasses Africa in mechanical manipulations and the utilization of the forces and resources of nature prove anything except in so far as argu-

ments based on such considerations beg the very question, and are therefore assumptions, hypotheses and temporary conclusions as a basis for further and more exact observations and measurements.

[3]

Heredity and Environment. On the other hand, while admitting the above arguments, it would be equally fatuous and speculative to insist or assume that all human beings are born equal, in the sense that the native endowment is always and everywhere, with some very few exceptions, the same. We cannot assume that the differences in adults, in the average of various adult groups, is due entirely to environment, any more than we can assume that it is due entirely to heredity. Original nature versus training is much the same opposition as is heredity versus environment, except that the latter pair of terms are, perhaps, while more used, a bit less exact, and more open to confusion in use. But if by heredity we mean all that an organism has in the way of structure, that is, receptors of various kinds, effectors likewise of several kinds, and manifold connections existing, prior to experience, between them, plus other and complicated structures which, when played upon by the stimuli of the environment in which the individual is found, result in the development of various abilities; and if, by environment, we mean all that is not the organism, whether cultural, social, physical, or what not, present in fact or in record, then the terms have the proper significance. And, it is worth repeating, there are two decidedly opposed points of view as regards the relative importance of each of these; one holding, to possibly exaggerate a bit, that nature, original endowment, the gifts we bring with us, our heredity, our ancestral past, is supreme, and that if this is good, all will be well; the other holding that whatever this item be, the chances are, on the whole, very slim, unless the environment, the actual teaching, the training, the influences and stimuli brought to bear, are good, very good.

As is so often the case, where partisan ideas dictate a policy or a generalization, there is exaggeration. While it is true that we do not actually know, except in some bare details, what is native and what is acquired, and to what degree acquisition is dependent on structures known or unknown, the fairest conclusion in the light not only of psychological and biological evidence, but in the light likewise of what we know scientifically

and exactly in other domains, is that heredity and environment, each in the largest and most objective sense of the terms, are co-operative in a definite way. First, that the structure inherited, ready-made at birth, is the one and only basis on which anything can be or ever is developed through training. Where structures necessary for a given trait are absent, that trait cannot develop. To think otherwise would be to abandon our original technological attitude of a scientific study of behavior as the activity of definite structure. Second, that even if a given structure, the proper and sufficient basis for a given trait is actually there, it will not and does not develop simply in and of its own nature; in other words, environment is necessary to offer the stimuli for its touching off and actual activity, simple or developed. Third, that many traits are possibly capable of being developed on the basis of alternative structures, so that for many traits there may not be a one and only basis for development. Fourth, that many traits depend on very complex structures, so that not merely the original structure is necessary, but such original structures plus definite growth and conditioning and modification of them through such early training and stimuli that their combined activity makes possible a later even more complex form of behavior if and when such prerequisite developments have been made. All this is, frankly, speculative—but speculative in the sense that the evidence, such as it is, points this way, and that it is also a basis for further investigation. Intelligence is an example of a trait which is complex, which develops in some individuals to high degree, in others to a low degree, and which, however we define it, is capable of being destroyed. What structure intelligence depends on, however, is a current matter of dispute, but that it depends, in the final analysis, as much on structure as on the experiences and conditionings of that structure is merely to state what is a necessary scientific basis for a study of behavior in any but a speculative and useless way. Intelligence, from the point of view of a scientific study of behavior, cannot arise of itself out of nothing, cannot be a floating activity without a basis for its functioning, and is therefore dependent, fundamentally, on structure. But, to state the opposite point of emphasis again, it is also equally dependent on environment, for it is not merely conceivable, but at least indirectly demonstrable, that even the requisite structures, whatever they are, would not function except on the basis of the adequate stimuli which, in this instance, are not simple but complex, involving time, constant growth, and the co-operation of

many structures,[3] which, when they become subject to experience, to stimuli, to opportunity of exercise, become so modified that the individual can and does exhibit new traits and abilities, functions in ways that are new and were not there to begin with. We can say of a definite individual, aged, say 40, with a so-called intelligence quotient of 135, with a manic-depressive personality, with a weight of 200 pounds, a height of 68 inches, a liking for golf and whist, a dislike for strawberries and movies, who has married three times, who is very religious, and who has several phobias, that this picture represents what has happened to a native endowment through the differential activity of the sum and total of the environment which he has lived in. He did not, as such, by original nature, have any emotional attitude or feeling-tone with reference to golf, strawberries, movies or whist; he did not have an I. Q. of 135 at birth; there was no actual necessity of his eventually weighing 200 pounds or attaining to a height of just 68 inches, and so on. But the I. Q. of 135 represents what he can and does rate on a scale, though had his training been different he might have rated higher or lower; had his dietary habits been different he might have weighed more or less, and might also have been taller or shorter on this basis plus other factors of sleep, exercise, disease; he certainly did not have any native trait that required that he marry three times, but what he did do, as a final picture, is dependent on native traits and structures, first in terms of their early conditioning, then in terms of conditioning on top of that, finally resulting in the picture drawn. This is merely to insist again on determinism, though to point out the specific conditionings which finally brought about this complex picture is asking more than the science of psychology can do in any but the sketchiest of ways at present. But the main point holds; what an individual becomes is the result of what structures existed at first plus what modifications have been brought about, through continuous and complex activity and functioning, always on an ever increasingly complex level. But, naturally, several of the traits and characteristics we have imagined above as revealing the differential results of environment working on the basis of heredity will require and receive further treatment in later chapters.

[3] As for Note (2), and also Conklin, in general; Skinner, Gast and Skinner, Ch. IV. See also Watson, *Behaviorism*, Chs. V to VIII; Warren, Ch. VI and such additional studies of children as Fenton and Gesell. See, for a profound methodological and technical study of this problem, Kelley. Confer also Schlapp and Smith in general.

[4]

Substitute Responses and Stimuli. But it is now necessary to return to a consideration of the S——R formula, leaving further treatment of the question of native versus acquired traits to later arguments; where the antithesis will again become evident and have more than a merely general significance. It will be remembered that we divided the material of this chapter from the one preceding it on the basis of "integration," the general consideration of structure and the nature of connections in general being, relatively speaking, biological, as compared with the more psychological aspects involving a consideration of the growth of new, acquired complexities and connections, this latter question taking us afield into a discussion of native and acquired as such. Correlation and coordination have already received treatment, and we have discussed such native, simple, unmodified circuits as are usually called reflexes; several of which may, of course, become associated into a pattern of simultaneous mechanisms or into a chain of successive mechanisms, where each link is set off by an S which is really the R to a still earlier S, and so on, a complexity which might well be represented by such a formula as S——R (S)——R (S)——R and so on.

But all behavior, even of the new-born infant, is not made up of simple, uncontaminated reflexes, or of mere combinations of successive or simultaneous patterns. Change immediately takes place, a shifting of S's and R's and the bonds between. Thus, while that bodily condition which we call hunger is the original stimulus which leads to the unlearned response of crying, say, or a light the original stimulus which leads to the native response of move-the-head, or contact of breast or nipple the original stimulus which leads to the response of open-the-lips and grasping-and-then-sucking, experience soon brings it about that such responses are occasioned by stimuli which would, originally, have produced no response or at least not the response in question. Thus, the child may come to cry when alone, even though just fed, or to open its lips when it sees or perceives the breast, or may turn its head to other stimuli than a light or a sound, or to some specific sound such as its name. All behavior, as has been said, may be described in terms of these substitutions of S's and R's and the bonds between, but it is now necessary to see some of the technique and theory underlying the theory.

This fact that substitute stimuli, that is, stimuli which once had no effect or a different effect, can and do produce behavior

which was originally brought about only by a different stimulus, was once widely and is still to some extent, in certain schools, explained on the basis of "association" or "association of ideas." This type of explanation is an excellent example of the difference, clear and distinct, between the older speculative schools or remaining tendencies in this direction, and the newer more objective biological explanations and descriptions. To explain substitute S's and R's in terms of the theory of association of ideas is to be subjective, to involve introspection and consciousness; whereas to describe the substitution in terms of the theory of conditioned behavior or conditioned reflexes is to be objective and scientific. An example will bring out this difference: thus, a young child will respond to the actual pain of a pinch administered by an adult's fingers, while an older child, if he has been thus pinched very often, and sees the fingers approaching, and perceives the facial and postural and voice-tone facts involved, will respond to the sight of the person, the tone of the voice, the bending of the fingers exactly as he once responded merely to the actual physical stimulus of the pinch. This is a statement of the actual facts; the theory of association of ideas will say that the idea or perception of the face or the tone of voice or posture of fingers brought to mind and consciousness the idea of pain, though exactly what an "idea" of pain is like is hard to say. And for an individual to say that such an idea of pain or memory of pain or what not is roused by the sight of the other associated ideas or factors is to be introspective where introspection serves least well and is not, as we shall see, necessary anyway.

Furthermore, in the case of animals, we cannot ask them to thus introspect, and it would be dubious, to say the least, to claim that animals have such ideas as the child claims to have or as adults insists they have. If the argument is unsound for human beings it is doubly so for animals. Still further, no amount of introspection will always serve to recall the "associated ideas" theoretically involved; thus, a person may fear some definite object or person and be quite unable to say why, or may even have just fear without saying or being able to say what is being feared. And still further, there is no way in which we can account for the action of ideas, either how one idea can, as such, bring another to consciousness, or how they are, as ideas, associated, or how, still further, ideas can bring about the action of muscles, glands and other bodily parts. To be sure, since language is at best a poor tool for the expression of facts, we may and do, when we find it convenient and are not too particular about

the exact facts and their relation to other facts, use such language as that of the associationists. In such cases, we may refer to the theoretical power of such factors as recency, vividness, frequency, mind-set and emotional readiness as the basis for the associating of given ideas, but all these terms are, at best, only superficially descriptive, and at worst, ignore the real issue, namely, how did the association, if we call it that, come to be, that is, what native and what acquired structures are involved? [4]

If, however, in using such terms as vividness, recency and those usually linked with them, we really have in mind underlying structures, nerve circuits, circuits between receptors, centers and effectors, we will do better to state our argument in such terms and thus be more fundamental and avoid the looseness and intangibility of the older nomenclature, place the whole matter on an experimental and demonstrable basis, make it as far as possible quantitative; do away with the need or the use for introspection, and make the explanation apply to all cases, not only the normal, but the abnormal, to animals, to children and to cases where even introspection furnishes no clue. It is true that the associationist, nowadays, often has such matters in mind even when taking the language of association, but merely to have such ideas in mind is not enough, for the whole linguistic description in terms of association is misleading, easily confused and cumberous.

On the other hand, the purely objective nature of the theory of the conditioned response leads to simpler language, more exact and more easily understood descriptions. The conditioned reflex or conditioned response theory deals with structure and its modification and, therefore, holds in line with our statement that for a scientific study of human behavior we must, wherever and whenever possible, deal with structure as a basis for behavior. Incidentally, the whole subject is another instance of the proper relationship of biology and psychology, in that what psychology takes as a foundation is based on facts which enter just as properly into the domain of biology and physiology. The original experiments, begun over twenty years ago, the record of which is now obtainable in English, were devised by the Russian physiologist, I. P. Pavlov. The technique, actually complicated as regards detail, is simple in general outline, and systematizes the

[4] Woodworth, *Psychology*, as above and also Chs. XIII and XVI, *Dynamic Psychology*, as above, and also Chs. V and VI; Pavlov, particularly Chs. I to VI and XXIII; Mateer, particularly Chs. I to IV; Burnham, particularly Chs. III to VI; Ogden, as above. Also confer references to Note (2). See also Watson's experiments, as reported in Chs. II and III of Murchison.

facts concerning what we have called above, substitute responses and substitute stimuli, and reduces the whole matter to a sound experimental demonstrable basis.

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Conditioning of Behavior. In outline, the technique consists in measuring, first, under standard conditions of surroundings, temperature, time, and all that, what flow of saliva a dog excretes when stimulated with food. This "food" is a normal, native stimulus for such a flow and the flow is native, unlearned, unconditioned behavior, and the whole thing is based on original structure. The next step is to see what effect a stimulus, such as the sound of a bell, has upon this flow of saliva, and since such a stimulus is not, by original nature, related to the saliva response, the effect, at first, is nil. But if, on many occasions, the bell is sounded when and as the dog is fed, a change takes place; the sound of the bell then suffices, all by itself, to bring about the flow. Such a change in behavior is called, variously a conditioned reflex, a conditioned reaction, or conditioned response, though of course it also involves a conditioned stimulus. Incidently, as we shall see later, in view of several other facts and experiments, it is probably wise not to use the term "reflex" in as much as the behavior is apparently not a true reflex in the sense of the term when used in connection with such native behavior as the eye reflex or the patella reflex, but is more properly described by such other terms as "response" or "reaction."

Naturally, in such experiments, every effort is made to do away with the fortuitous influence of other factors than those deliberately and experimentally subject to controlled change, so that the dog is actually in a sound-proof box, is observed through a periscope, and all conditions save those involved in the conditioning kept constant, the S always also being constant, as regards its own specific quality, intensity, and so on. Finally, it is possible to describe the results of all such experiments in terms of structure and to avoid any interpolation of "ideas" of the dog or any conscious efforts or deliberations. But, before we return to this point, there are some other minor considerations to discuss. First, certain time elements. Thus, the unconditioned native stimulus (food) may be given before the conditioned experimental stimulus (bell), or the two may be simultaneous or overlapping, or the conditioned experimental stimulus given first followed after a period by the unconditioned native one. Differing results follow for each modification. Thus,

if the unconditioned native stimulus (food) is given first, and then followed by the conditioned experimental stimulus (bell), no conditioned response was built up. Putting this in different language, this means that if the normal, native circuit of receptors, centers and effectors functions, subsequent events or stimuli have little or no effect on them, a conclusion which leads to several considerations, first, whether "rewards" preceding a called for act will bring about that act, second, whether "punishments" after an act will tend to inhibit it. The later aspect is still almost untouched from this point of view, for in such an experiment the conditioning stimulus following the native reaction would have to be a painful one.

On the other hand, if the conditioned stimulus is applied first, followed by the unconditioned, with some time interval between the two, a desired conditioned reaction is obtained. But since, in this variation, the food is not administered until the actual experimental stimulus, say the bell, is removed, the conditioning really takes place in terms of a "trace" left in the neural circuits, and the interval between the giving of the conditioned stimulus (once the reaction has been established) and the appearance of the response corresponds, quite accurately, to the time allowed to elapse between the two types of stimulus in the period of establishment of the reaction. Thus, if a bell is rung, and food administered five minutes after the cessation of such a sound, and the conditioned reaction finally established, the immediate effect of the bell will be nothing, but after a period of five minutes the saliva will flow. Such trace reactions have been established with intervals as long as thirty minutes. The other type of experiment, in which the two stimuli are administered simultaneously or overlapping does not add anything pronouncedly different from the above, though the name "delayed" conditional reaction is given to that type which has resulted through giving the unconditioned stimulus after the conditioned stimulus has already been active for a given period of time, the latter either continuing or ceasing upon the application of the unconditioned stimulus. In such cases the conditioned response will be delayed an interval corresponding to that which obtained in the experiment, though here, as stated, there is no actual interval with complete lack of stimulus between the two; the one either follows immediately or the conditioned overlaps the unconditioned. Thus, if a bell has been ringing for three minutes, and then food is administered, the bell either ceasing or continuing for a bit, the final reaction established will show a flow of saliva three minutes after the bell is rung. This "delayed"

reaction is not to be confused with that due to a "trace" as previously described.

Incidently, the so-called trace reaction as contrasted with delayed or simultaneous varieties, has another peculiarity of somewhat pronounced importance, namely, that there is greater specificity in the latter instances, and greater irradiation in the former. That is, while a delayed or simultaneous type of condition is actually in process of being formed, a first phase exists in which a stimulation very similar to but not identical with the original conditioned stimulus will suffice to elicit the response. Thus, if a touch stimulus is being used as the conditioned factor, in the early stages of the process a touch on any spot, not merely in one designated spot will elicit the response. But when the reaction becomes firmly established then none but the actual definite unmodified stimulus will suffice to set off the conditioned reaction, i.e., it becomes specific. On the other hand, the trace conditioning, the type due, it will be remembered, to a species of training which offers the conditioned and unconditioned stimuli separated by an empty interval of time, never becomes specific. The initial irradiation, characteristic of the first phase of the delayed and simultaneous types, persists in the case of the trace reaction type. This irradiation, furthermore, becomes much more pronounced than in the former cases, particularly when the period between stimuli during training was very long, with the result, in some cases, that almost any stimulus will suffice to bring about the conditioned response.[5]

While we speak of conditioned responses, it is true that this term may also be taken as comprehending inhibitions; that is, just as a given conditioned stimulus may be experimentally substituted for a native stimulus, so also an experimental stimulus may be made to inhibit a given activity, though, since inhibition involves neural activity it is not mere passivity that is really involved, but merely another type of activity or conditioning, one, incidently, quite as important in the actual maturing and training of the individual. Still other aspects of the whole situation have been brought out through laboratory experimentation, but sufficient concerning this aspect of modern psychology has been presented to serve our purpose here, that, namely, of indicating a basis for the understanding of human conduct in terms of demonstrable and scientifically based structures and modifications thereof. One point remains; the reasons for not using, when being accurate, the term "reflex" with reference to these conditioned

[5] See, particularly, as above, Pavlov; confer Mateer, especially for details of the experiments of Krasnogorski. See Watson, *Behaviorism*, also.

reactions. In the first place, just in so far as such reactions are delayed, sometimes, as noted, even to the extent of thirty minutes, they cease to have any significant relationship to what we ordinarily call reflexes, one of whose chief characteristics is speed and not delay. In the second place, it has been shown, experimentally, that whatever new circuits are involved, (and such circuits certainly are established by the process of conditioning), none the less such new circuits will not and do not function of themselves if the original native pathways from receptor to effector are destroyed. That is, if the circuit involving the native unconditioned pathways from receptor to center and thence to effector are cut out, even though the newly established circuits presumably remain, they do not function and the conditioned response is therefore destroyed.

Finally, it must be noted here that such conditionings as we have described can be produced in humans, young or old, in exactly the same way as in animals, and that they actually are constantly produced, not merely in laboratory situations, but everywhere, the very nature of experience being such that this type of reaction is continually brought about, deliberately, automatically and accidently in the growing child and that, finally, such reactions may involve striped or unstriped muscles, or a combination of both, muscles and glands together or separately, may be of the simultaneous or delayed or trace type, may be such in the ordinary or in the inhibitory sense, may involve rather definite specificity or may be widely irradiated. We will return to this general subject, particularly as regards emotions and instincts, so-called, in the next chapter.

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CHAPTER IV

THE DYNAMICS OF BEHAVIOR

1. Drives versus Mechanisms. 2. The Nature and Function of Emotions. 3. The Question of Instincts. 4. Other Types of Drives. 5. The Conditioning of Drives. 6. Summary. Bibliography.

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Drives versus Mechanisms. It must be once more insisted that analysis does violence to the actual facts, and nowhere more so than in the domain of the biological and social sciences. Even to speak of "drive" as opposed to "mechanism" is an instance in point, as have been so many others that we have previously noted. But science in part proceeds by such analysis and provided it is constantly kept in mind that it is, as such, artificial and technological, the actual situation of the concurrence of experienced facts will be seen as it is.

We have seen, in our brief examination of what is called original nature or the native equipment of man, that it certainly involves and includes receptors, (exteroceptive, proprioceptive and interoceptive); effectors, (striped and unstriped muscles, duct and ductless glands); and, finally, some inherited and preferential connections between all these in various patterns and reflex circuits. That is, structure, as such, is inherited in rather complicated but modifiable patterns. In a true sense all these are mechanisms in that they are the structures which function in behavior, are the bases, indeed, of behavior, but it is none the less possible to make a distinction between them and to call some, speaking relatively, mechanisms, and some, again by contrast, drives. But a drive is in no sense a disincarnated power, an entity having independent existence, or a species of freely floating or circulating energy; whatever the organism does it does in virtue of structural reactions to the energy of the environment.

One basis for the technological distinction of drive and mechanism is on terms of the questions, "Why?" and "How?" Thus, we may ask, Why do we do so and so, what is the motive, what is the driving factor? or we may ask, How do we do it, what is the mechanism involved, what is the means? To be sure, as we have said, the two merge into one another and are definitely in one division or the other largely through our placing them

there for purposes involving the understanding and cataloging of human behavior. Science, as a general rule, has little use for questions involving "Why?", since answers in terms of that question tend to be too dogmatic, to end artificially then and there and apparently to do away with the necessity for further research and inquiry, or else to lead to an infinite regress of "Whys," no one more fundamental than another. But if we realize this, and see also that the terms are, more or less, interchangeable, the concepts will enable us to add to our understanding of human behavior. Still further, a drive may be thought of as analogous to a "trigger," or as a situation or activity which initiates a more complex stream of behavior, or as a momentary activity which initiates a more prolonged and more highly ramified one. Thus, from the point of a reflex circuit, say, consisting of sense organ, afferent nerve, center, efferent nerve and muscle, the external stimulus might be thought of as the drive, while, looking at an emotional response and its more complicated structure, the initial afferent neural impulse which starts off that complicated train of behavior would be the drive. But, still further, if we look upon an emotion as a unit and the conduct in terms of it as its consequent, then the emotion itself, as a whole, would be the drive, and the bones and muscles which lead to re-adjustment of external behavior, the mechanism.

Still further, if we introduce the word "motive," we can add something to the understanding of the distinction, provided we do not become too introspective. Thus, we ordinarily speak of the motive for an act or a series of acts, meaning thereby the emotional attitudes, the interests, the "instinctive" bases, the urges, needs, passions and appetites of the organism, and if we take all these words in an exact and structural sense we can also see the justification for calling them drives, though some of them, particularly those called "instincts" will need our later careful investigation and definition. But, for the moment, it will suffice to point out that our interest in bridge, our passion for antiques, our fear of loneliness, our need for food, our anger at a slight or an insult, are the drives which give rise to long continued, highly complicated movements and behavior, in a word, which actuate the adjusting mechanisms. A muscle does not move in and of its own desire; we do not excrete saliva or tears for their own sake; they are the working out, as mechanisms, of drives behind and prior to them, originating elsewhere. In this sense, what we call thinking is a mechanism *par excellence,* in that thinking is never, regardless of what an individual may claim to the contrary, for

its own sake, but always in the service of the more fundamental drives. Thinking is thus a tool, a mechanism, and only by courtesy a drive or in a secondary sense; thinking, as thinking, never is the primary, original start of behavior; it is always set working by something else. But there is much more to say about thinking which is not in place at the moment, so we will return to it later.[1]

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The Emotions. But it is necessary, at this stage, in order to complete the study of drives, to investigate further and in more detail just what we mean by an emotion, an instinct, a hunger, a need, and to do so objectively and non-introspectively. Indeed, so far as introspection goes, that method can tell us little or nothing about any of these things, and what little it may tell us is false and misleading. However conscious we may be of an emotion, the consciousness of it is not the emotion, nor does it really tell us what it actually is. We may and do think "about" an emotion, but the emotion itself is not thought or thinking. An emotion, structurally speaking, and that is the only adequate sense in which it may be defined from our point of view, is an hereditary type of reaction involving changes of many parts of the organism, but particularly the viscera and glandular systems. That is, the emotion actually is this series of changes, and is therefore quite distinct from the consciousness or awareness of it in terms of words, symbols or associated (conditioned) ideas or memories. As we have said before, the organs involved in this type of reaction or response are, as structures, inherited, plus the necessary connectors to constitute circuits, but what will actually act as the stimulus or situation to set them off is not, as such, a matter of heredity but of training and experience, with the possible exception of some few very fundamental stimuli.

Furthermore, to comment in more detail on the conditioning and training of the emotional type of response, it is apparent that such conditioning is so fundamental, so pronounced, so constant, that the original connections related to the structural basis for the expression of what might be called "native" anger, fear and love (the three theoretical emotional native patterns) become tremendously modified, and consequently the adult expression of emotion shows extreme individual coloring, and never, or under

[1] Allport, Chs. III and IV; Woodworth, Chs. III, IV, and V; Taylor, Ch. V, *Some Fundamental Activities;* Kempf, Introduction, and throughout; Watson, VI and VII.

only the rarest situations, reverts to anything even approximating the original type of native activity before such conditioning had modified it. Anger in a child is not what anger is in an adult, even the most unsophisticated adult; and even more true is it that what is, almost by courtesy, called "love" in the child becomes tremendously modified before it deserves that title in terms of adult standards of conduct. Indeed, it is perhaps better to follow a current suggestion that we use rather such signs as "x," "y," and "z" in speaking of the unconditioned and native expressions of the emotions, meaning by each of them a fairly definite visceral and organic reaction, and only call them by the corresponding adult terms when the conditioning has proceeded far enough to make the responses approximate to adult levels and characteristics. But, though we speak of adult "level," this does not mean that emotions become stereotyped in detail, but rather that they show a given degree of complexity, individuality and social reference. Anger differs, as regard its expression, from individual to individual; differs not merely as regards what is a sufficient stimulus or situation to evoke it, but also as regards what is adequate expressions, and as regards what thoughts and reflections and memories are present, and in many other ways. Some are slow to anger, almost immune to fear, to all intents and purposes cold and indifferent to love, while others are easily stirred to extreme rage, become fearful on what to others would seem insufficient basis, and are constantly either in love or about to become so. It is doubtful if sex or racial differences are the basis for such differences; rather it would seem on the basis of what evidence exists that it is the training and previous experiences of the individual which, through conditioning, have brought about these characteristically different ways of behaving. That is, returning to the S——R formula, while there were, in the case of each individual, a few original, rather definite S's for the evoking of a given emotional state as an R, substitution and conditioning has brought it about that many S's may and do suffice to evoke the R, and many R's become joined to the original R and even, in part, supplant it in emotional behavior.

Thus, assuming, as the evidence tends to justify, that being dropped a few feet freely through the air to a mattress, very loud sounds suddenly presented to the infant, sudden jars when about to fall asleep are native S's which will evoke, apart from experience and training, the response of fear, it is apparent that this simple situation soon changes. Assuming, again, in terms of experimental evidence, that being held rather tightly, so that all movement, even squirming, is interfered with, is a native S for

anger, and that being smoothly stroked, rocked, warmed, patted and the like is a native S for the response love, it is quite evident that these simple situations or circuits are soon tremendously changed. Many S's, even some that, at first sight, would seem to be almost impossible to connect with any one of the given emotional responses, soon come to be a sufficient and compelling S for them, and likewise, whatever is the native and original R, new R's soon are added, the original R modified, so that we have, on the basis of the original circuit, a new S——R that has little resemblance to, and no other connection with the original circuit other than that of evolution and conditioning and the fact that some of the same native structures and connections are still used. Naturally, in so far as a response is emotional at all (and indeed this is the criterion), the visceral and glandular elements and portions of the circuit remain as parts of the new circuit. Human beings are not born afraid of, or angry at, or in love with mice, snakes, parents, water, dogs, cats, lightning, thunder, open places, darkness, ghosts, electricity, automobiles, whiskers or Heaven or Hell, but they may and do come, through the process of conditioning, to show any emotional attitude toward any of these things. Much of the conduct of the neurotic and the insane is to be understood in terms of this conditioning of the emotions through improper, insufficient or misunderstood experience. But, in all behavior that is properly called emotional, however much the S or the R may have changed, the visceral elements of the original circuit are still involved, though they, too, may become modified. Naturally, too, human experience brings about such combinations of R's and S's as we usually call sentiments, in which, however, there is still a basic element of emotion in the more narrow sense, modified by ideas, ideals, memories, purposes, and other factors.[2]

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The Instincts. In our discussion of native as opposed to acquired traits, we mentioned as needing further discussion, the question of instincts. The word instinct, while variously and widely criticized in current psychological writings is, in some

[2] Allport, Chs. III and IV; Bernard, Chs. XVIII and XIX; Meyer, Ch. VIII; Kempf, Introduction; Thorndike, *Educational Psychology,* Ch. III. Cannon, Darwin and the Lange-James volume should be consulted throughout for general theories; also Crile, particularly, Ch. XIII; Murchinson, Chs. I to III, by Watson. See Shand for the more complex sentiments, involving emotional bases but with added ideational background. See Schlapp and Smith, particularly Bk. II, Chs. I to III for picture in social and behavioristic terms of action and reaction of drives and mechanisms.

ways, a useful term and one that, properly and accurately defined, could well remain part of the nomenclature of the science. The difficulty is to define it in such terms that it will mean a definite type of behavior and not become so loose that it will be invoked to cover a multitude of errors and a mass of ignorance. As contrasted with the emotions, instincts are primarily the activity of circuits involving striped muscles in connection with the exteroceptors, while the emotions are more nearly concerned with interoceptors and unstriped muscles and ductless glands, but this is decidedly not to say that instincts and emotions have no relation to one another and do not become involved in one large act of behavior, for both experiment and observation show clearly that they do. Where emotions may result merely in visceral disturbance and the whole drama of conduct be largely in terms of that inward disturbance plus whatever aspects of it become reflected in consciousness, what we will call instinctive behavior is more definitely overt and results in some type of avoidance, readjustment, withdrawal; in a word, in relatively active rather than relatively passive experience. To be sure, in so far as an emotion is a drive and utilizes either learned or native abilities to consummate its ends, then the story is more complex. Where the emotions are often relatively implicit, as such, the instinct is relatively more explicit. And provided we do not try to make this instinctive explicit R too definite, too complicated or too exactly related to some definite S, we will be safely within the compass of the actual facts. Thus, while it would be quite improper, in view of the facts, to say that there is a definite, detailed, well-established instinct of nest-building in birds, it would be proper to say that the final developed habits of nest-building which birds exhibit had its origin in an instinctive or a reflexive basis, while its course of development was due to learning, experience and the additions that these things brought. Putting this otherwise, one might well say that to refer the ability to build nests to a nest-building instinct, the ability to get and consume food to the food-getting instinct is to be very superficial, is to assume what is not proven and, after all, is merely to give a name to a hypothetical something or other which will do what its name indicates. Actually, as we have indicated, these so-called instincts in this larger sense of the term, are habits or, as sometimes called, habit-complexes. To say that individuals flock together because they have a gregarious instinct is simply to say that they flock together because they have a tendency, a native compulsion to so flock, and leaves the structure and all the facts involved undescribed.

Such large and detailed lists of instincts as have been offered by many psychologists are certainly no longer acceptable, nor is the manner in which some of them at least were compiled acceptable. To observe the behavior of a large group, and to call instinctive that which all do in pretty much the same way, and overlooking exceptions, will easily result in a list of so-called instincts. But these stereotyped responses may equally well be, as we have seen in our consideration of native conduct, the result of learning on the basis of more or less similar original structure in more or less similar environments. On the other hand, genetic studies involving the actual observation of infants while the suspected instincts are developing, and allowing no teaching, as far as possible, to confuse the issue, result in much less ambitious lists of native traits or instincts, and the individual items of the lists are so simple that it is even doubtful whether to call them by that term or to use the simple and less confusing and less assuming term of reflex. If these reflexes, plus the actual general and specific structures existing in the normal human being are thought of as the basis for so-called instincts, no harm is done, but that still leaves us in the position stated above, namely, that there are no instincts in the sense that nature has endowed the human being with definite receptors, connectors and effectors to achieve, apart from learning, such complicated acts as have been, in the older literature, called instinctive. As we have said previously, everything, from one point of view, ultimately depends on native structure, and equally, from another point of view on environment, but best of all, from a more summary and all-inclusive point of view on the differential and mutually reacting factors of inherited structure in its relation to the environment.

This is really to say that there are no definite instincts, and this is probably the present consensus of opinion, but to revert to an earlier remark, it is sometimes convenient to use the term, provided we understand that the facts are what they are, namely, that the so-called instincts are habit complexes, built up on the basis of reflexes, possibilities of reaction in terms of muscle and gland, and are in no sense ready-made categories or species of behavior somehow packed into the make-up of the inexperienced and unmodified child. We can demonstrate the existence of reflexes, of receptor-connector-effector circuits in simple matters, but we cannot demonstrate it in the case of any of the widely assumed and conventionally accepted instincts. Furthermore, the very reflexes and structures which will produce a so-called instinctive reaction of gregariousness will, with different training, pro-

duce a hermit type of conduct. We cannot explain the hermit's conduct by assuming an absence of a gregarious instinct, simply because he does not congregate with his kind, nor can we assume that the woman-hater is lacking in the sex or reproductive instinct, simply because he does not fall in love. We can better state the facts and interpret the conduct by saying that the one and the other act as they do in terms of relatively undifferentiated human original nature plus the changes and conditionings brought about in it through experience in the group in which the training and conditioning was given.

Nor will it do to speak too confidently of "chains of reflexes," if such chains are supposed to pre-exist before experience. The association or, better, the linking of a series of acts into a chain is a process of conditioning and due as much to experience as to nature, though naturally the acts or responses thus linked are based on native structure plus what changes have already taken place in it. But, as the literature goes, there is probably a wider difference of opinion between the extremes in this matter of instincts than in anything else, and while the observed facts, as well as the more objective thinking and judgment, certainly incline toward the simpler hypothesis that what we call instincts are social structures built on the early manifestation of simple reflexive activities, the concept has become so interwoven with psychology in general that it is difficult to disentangle it. It is worth reading some of the older classic accounts of instinct, in terms of which it would seem that a child need learn hardly anything; a wise Providence has equipped it for all the struggles of life, all the problems, all the vocations, all the philosophies, by giving it Instincts.

Some attempts have been made to catalog instincts from the point of view of the reflex concept, and an examination of lists of such reflexes will still further make clear that the older idea is hopelessly optimistic and sweeping. Thus, experiment and observation make it fairly clear and sure that, apart from training and conditioning and the effects of experience, human beings move, crawl in rather definite straight lines when seeking food, avoid obstacles by trying to go around them, localize stimuli, especially pain, on the body, localize external sensory stimuli and direct the organism toward them, indulge in grasping, make adjustments of sense organs to changing conditions, and other similar, simple, movements and adjustments such as sneezing, coughing and the like. This brief list, when compared with the detailed and rich lists of the older point of view seems almost ludicrously insufficient, but it is to be remembered that these

are the bases, the indispensable foundations of all further development, for did not the organism, in response to some inner (interoceptor or proprioceptor) or outer (exteroceptor) condition move, make some overt response, life for the organism would be a constant passivity of changeless and timeless nothing. Without activity on the part of the organism, whether it originate in inner changes of condition, (tension, chemical or electrical conditions), or whether it originate in terms of the stimulating energy of the external environment, transformed by specific receptors into neural energy leading finally, *via* some center, to muscular or glandular response, there would be no experience, no learning,—in a true sense, no organism.[3]

However, it is perhaps fair to say that even such lists of reflexes or simple acts as these experiments and observations propose may be equally open to criticism with those of the older point of view, though the whole newer idea and the newer attempts at lists of such fundamental native abilities are more in line with what we know not only of the human but of lower forms of life. The real problem, now, is to trace the genesis and development of such specific socialized habit-complexes as "collecting," "hunting," "gregariousness," "creativeness," "leadership," and the like, to their origin in definite conditionings of these simpler reflexes, singly or more probably in groups, and to show why, on an approximately equal basis as regards these initial native reflexes, some individuals develop the classic "instincts" and others do not. This, of course, would be a tremendous task, but a task properly within the domain of the behavioristic psychologist who seeks a science of human behavior, and it will be accomplished, if at all, not through speculation and assumption but through careful and thorough analysis of actual behavior of actual children in a social environment.

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Other Drives. We have been concerned, in this chapter, with what we called the dynamics of behavior, the search, namely, for

[3] Since the text discussions of emotions and of instincts are frequently interwoven, the student will best consult again the references to Note (2) above, also those of Note (2) in the previous chapter. Compare also, particularly, the list in Watson, *Psychology,* Ch. VII, taken from Thorndike's *Original Nature of Man* and summarizing earlier lists, with Watson's own genetic study in same chapter, and in Murchison, Chs. I to III. See also Watson's treatment in Chs. V and VI of his *Behaviorism,* particularly the chart on page 106. See, for general treatment of bodily conditions, Cannon; see Thorndike, *Original Nature of Man* for more detailed treatment; also summary lists in Ch. VI of Warren.

what might be called fundamental initiating conditions for behavior, and we have already determined that while the terms drive and mechanism are really relative and that any mechanism can, at times, be a drive, there is a proper sense in which we can think of some activities as being the basis on which others are to be understood. From this point of view we have already discussed the emotions and instincts, reducing the latter term, in large measure, to reflexes as a basic element, and re-naming the more developed traditional instincts, in the classic sense of the term, habits or habit-complexes formed through the conditioning of the simpler reflexes in the process of adjustment to the physical and social environment.

It would also be proper to include in the list of drives some of the larger and more fundamental states of body, physiological conditions of the organism, such as hunger, sex, and the like though, again, one must be careful not to include in connection with the physiological states as drives, any complex, pre-fixed and preservative mechanism. As with the emotions, so too here; by nature and structure we can be and do become hungry, have sex urges and other appetites, such as thirst, but there is no mechanism that is native which can bring about, apart from training, the obtaining of food, or a mate, or drink to satisfy the need. If the organism is actually hungry, and by that we mean a definite biological, physiological condition, involving movements of the viscera, conditions of blood chemistry and associated facts, and food is presented to the mouth and lips, sucking and then swallowing movements will take place apart from training; but no matter how great the need for food, the organism, apart from training, has no established mechanisms for going and getting it, unless we allow here such reflexes as the straight-line crawling movements and grasping and handling, mentioned above, and even these must become highly trained and conditioned before they have real value to the hungry individual. Left to nature and a socially empty environment, the average infant would starve, and the fact that it did not would be due, not to any specific ability to get food, but to fortuitous circumstances which might bring food within the reach of its mouth in the course of purely random movements of the body and locomotor apparatus.

So, also, and to a greater degree, with what we may, by courtesy, call the sex drive, which certainly has no definite mechanisms for the fulfillment of its purpose, but again consists of a definite physiological and biological state of the organism which can be changed and satisfied by certain more or less complicated

activities. But, while the structures exist natively, which can bring about the consummation of the sex act, they are not, natively, linked up as systems or circuits of receptors capable, apart from training, of consummating the need or desire. Training can and does show how to satisfy the sex hunger, but the training results in many forms of satisfaction; indeed, sex drives may be satisfied in almost as many ways as can food needs and hungers, and as many perversions or peculiarities produced in the one case as in the other. What we call dietary idiosyncrasies in the one case can be balanced, in the other, by just as definite and just as abnormal types of satisfaction or consummation of the sex cravings. To be sure, in both cases, but particularly in the instances of the matter of sex, society and tradition, rules and regulations, norms and inhibitions, establish what are called safe and proper and decent channels for the conduct of consummation. Though such rules and regulations exist with reference to the consummation of all drives, those relating to sex are particularly stringent. The reasons for this, and also the details of the peculiarities of sex conditioning, will receive treatment later.

This last illustration of the fact that, apart from training and definite conditioning, there is no such thing as a functioning sex drive, but only a sex desire or vaguely felt hunger and physiological need, perhaps even this being too sophisticated a statement of the simpler facts which exist apart from experience and conditioning, leads naturally to a wider consideration of this whole point of conditioning versus drives. It is often uncritically held that normal as contrasted with abnormal individuals differ as regards their emotions and their hungers and appetites, and this point is correct, provided that it be made clear that its real meaning is with reference to conditioning. That is, the actual drives, hungers, appetites and physiological impulses of the abnormal and the normal are, as such, the same, but the ways in which the one consummates these drives as contrasted with the other, is vastly different. When we speak of a person as having "lost his mind," if we mean by this that the conditionings previously existing, in terms of which the individual lived a normal and acceptable social life, have disappeared, been tremendously modified, then we are talking psychological and physiological sense. If we mean that a definite guiding something or other, some power or entity has been lost, we are talking nonsense.

Even then it may be argued that the drives and hungers of the abnormal are not the same as those of the normal in that they are much stronger. If we mean that they are actually

stronger, then we are talking in terms of speculation which would have to be verified in terms of quantitative fact and experiment, but if we simply mean that they are less or not at all inhibited, then we are saying the very thing here stated, namely, that the drives are the same, but the conditionings whereby they normally tend to be consummated in terms of rather definite conventional restrictions, and all that, are now broken, ignored, no longer the mechanisms which guide the personality to adjustments and consummation. This is, of course, the very point at issue, and it is here definitely held as a practical and a theoretical point that what constitutes the difference between normal and abnormal is a hierarchy or many hierarchies of patterns or conditionings of response and consummation. In later chapters of this book, we will be concerned with various types of abnormal behavior ranging from that merely relatively to that emphatically so, and it should here be definitely realized that what will distinguish such individuals from the greater mass of the normal will be, not the absence of drives, nor of patterns of consummation, not yet the absence of structures particularly but, rather, simply different patterns of behavior and consummation in the service of the same physiological impelling conditions which move us all.

One further point in anticipation of latter points and subjects of concern, that namely, dealing with systems of adjustment. It is clear, in terms of the above and related arguments in previous sections, that we increasingly integrate our behavior; that only the simplest and dullest and most slighted in the gifts of inherited structure remain at the lower levels of adjustment. We build, constantly, or strive to build, larger and larger patterns of response and adjustment, aiming, whether deliberately or simply in terms of the push and pressure of the environment, toward ever and ever more co-ordinated and inter-consistent plans and patterns of life in general. That we do not all of us, or even a decent portion of us, actually achieve such an integration of experience is another matter which will also, in its place, be debated, but we all so strive. In such striving, we build up many devices, many schemes, many platforms which, while they seem to us who use them not merely adequate but even remarkable and certainly justifiable and sensible, as a matter of fact are often as indefensible as the more peculiar behavior items of the definitely pathological and abnormal personality. In short, we all err in the creation of patterns of whole-response to the task and problem we call life and living, and it is, finally, part of the purpose of this book to endeavor to make clear how we might

adopt a better, a saner, a surer and a more firmly founded plan of adjustment, one that would take into account all that is known about structure, about conditioning, about patterns and about consummations.

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Conditioning of Drives. It is worth noting here as a further point that the things with reference to which society has set up behavior standards are just those things concerning which we have disputed the existence of definite native circuits governing behavior; society does not and could not set up standards for the activity of the reflexes, of the viscera, of hereditary patterns of color, height, weight and the like, but where it can form and condition, society insists on doing so, not always wisely, of course, but always insistently. Society cannot, apart from a doubtful program of eugenics, have any control over the native reflexes, the nature of the organs of sense, the type of circuits established natively, but it theoretically, at least, insists on controlling or trying to control the processes whereby the original, native, simple bases become the secondary, acquired, complex habits of the growing and maturing individual. Here, incidently we may raise the question, to be discussed more fully in another chapter, to what degree it is necessary for the organism to satisfy all needs. Putting this differently, society is interested in conditioning the drives, as drives, partially through insisting that certain mechanisms must be built up in connection with them and partially, also, though less wisely, through insisting that certain drives shall receive little or no outward expression at all. Thus, to consider the emotions, society in general, or any group in particular, may set up certain definite conditions for the exhibition, say, of anger. Certain stimuli may become socially approved as proper anger stimuli; others frowned upon; it becomes proper to show anger to certain people, at certain times, under certain conditions. So, also, with love and sex; there are, as we have stated, socially proper ways of consummating these hungers, and all other forms of activity in connection with the sex drive are socially taboo. Fear, too, has its social norms and standards, though they are not so explicitly developed as those for anger and sex.

But, as is quite apparent, all conditioning that takes place, while it is supposed to be in terms of social approval, actually is not. This is due partly to the fact that society does not exercise a rigid practical control over the actual process of conditioning of

the individual, but delegates it to parents, schools and a host of competing agencies. It is also due to the fact that some few experiences, because of various fortuitous factors, may condition an emotion or a drive beyond the ordinary inhibitory or reconditioning abilities of society or its representatives. And it is due, thirdly, to the undoubted fact that conditioning may take place under the very eyes and ears of the interested social representatives, and no one be the wiser, for we do not yet know all the factors involved and cannot yet control the process of conditioning to such extent that we can guarantee that a given individual, when he reaches maturity, will resemble the socially demanded pattern of conditioning. Still further, there may be unsuspected inherited modifications of structure which make it likely or more likely that a given individual will be modified and conditioned in one direction than another. And finally, the social norms, at best, or at worst, are somewhat flexible, somewhat uncertain, so that, as matters really go, we find great individuality in the conditioning of not only the drives and emotions, but the other urges and their structural bases which we have already discussed, particularly the hungers and appetities. What psychology can do to set up norms more authoritative and more wisely chosen is still a matter of debate, and a question we shall return to later. And this flexibility, this dubiousness, this conflicting of agencies and types of conditioning leads to still another problem, again for later consideration, that, namely, of conflicts in drives and conditionings.[4]

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Summary. It should be noted here that Chapter II, dealing with the subject, roughly speaking, of structure; Chapter III, dealing with the integration of behavior, and the present chapter, dealing with the dynamics of the organism, all cover, from different angles, much the same field. This is inevitable, proper, and should be productive of real understanding. Putting this another way, in Chapter II we considered the structures of the body from the point of view of their function as receptors, connectors and effectors, the various ways in which these are organized into systems, simple or complex; in Chapter III we

[4] As above, Cannon, Kempf, Crile, Watson. See, particularly, for maladjustments of instinct and emotion, taken biologically and socially, Ritter; for a preliminary survey of the results of bad conditionings of drives in general, see Hamilton. Confer also, Schlapp and Smith, particularly Bk. II, for social as contrasted with more theoretical picture. See also Seabury in general.

considered how such original structures have their relationships altered, additions to circuits made, in a word, how new circuits of the S——R formula are formed and old ones destroyed, or modified. There, too, we considered which circuits, represented by S——R, were native, which were acquired, and we discussed the whole technique, laboratory and experiential, whereby changes in S's and R's and the bonds between them are made. In the present chapter, we endeavored to distinguish between those structures and their circuits which were fundamental in inaugurating activity, that is, were drives; and which were secondary, in that they carried out behavior patterns which originated elsewhere, that is, were mechanisms, again discussing the nature of emotions and so-called instincts from this point of view. But in every chapter we were, actually, talking about structure; in every chapter we were interested in circuits of the S——R stereotyped formula; and in every chapter we were concerned with both "how" and "why" human beings act as they do under given circumstances. We are now in a position to summarize again the general results and to place matters in a proper relationship and emphasis.

In the first place, we are committed to the definite statement that all conduct is in terms of structure; an organ, a muscle, a gland, a nerve, a combination of such structures, simple or complex, and never in terms of or by virtue of anything else; no powers, abilities, traits, potentialities, latent possibilities or anything else exists which is not, in the final analysis, based on structure in action, structure performing and reacting to stimuli, whether originating inwardly or from without. In the second place, while certain rather definite original links exist between some S's and some R's, all such original or native circuits are modifiable through what is called conditioning, so that the science of human behavior cannot and does not cease with the ascertaining of what original circuits there are, but must proceed with the investigation of how, when and to what degree they become changed. Thirdly, while some of these circuits are, as has been said, relatively fundamental as originating behavior, that this classification is, again, something of a technological device, and it is necessary to consider, here too, how, when and under what circumstances certain drives are fundamental, and other structures secondary and, relatively speaking, merely mechanisms for furthering the drive of the originating structures. And, finally, it appeared that the behavior of human beings, from the very beginning, and regardless of what we would theoretically include in the category of native as opposed to

acquired, is subject to immense modification; no matter how we would stress heredity we must also consider environment, and no speculation, short of one that totally ignores all the facts can consistently deny the great importance, the differential importance, of both of them.

All analysis is, as we have said, artificial and destructive; and to the extent that science uses such analysis, it distorts the picture which can only be seen in proper perspective by constantly endeavoring once more to put together, in thought, all the facts and through appreciating the overlapping of all the divisions and the coöperating of all the antagonisms. Nor is this to argue that such insight can be had without the prior analysis; mere synthetic intuitive appreciation ignores the details which analytical science emphasizes, and is prone, too, to push a favorite presumption or prejudice too far. Particularly when the more complex matters of human behavior come up for discussion, such questions as, for example, the inheritance of insanity, the meaning of the phrase, a "psychopathic personality," the "interpretation of dreams" the nature of images and their assumed structural basis, and a host of other disputed matters of great interest, is the analytical technique of science invaluable; for then, if we look carefully, we see that such and such a speculative conclusion cannot be concretely justified for it is directly in conflict with definitely arrived at conclusions based on experiment and research. But these are matters for later chapters. Finally, to anticipate a much later discussion, the distinction made in this chapter between drive and mechanism, and the tentative labeling of intelligence or thinking as belonging to the latter group, is of immense importance from the point of view of investigations of personality, abnormalities of behavior commonly called neurotic or psychotic; in a word, the distinction between drive and mechanism alone enables us to understand the significance of integrated behavior—the behavior of the whole personality, a field which, it will be remembered, we specifically called the real and final field of a science of human nature.

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CHAPTER V

SUMMARY AND PROSPECTUS

1. Speculation and Ultimate Problems. 2. Philosophy and Psychology. 3. The Problem of Body and Mind. 4. Prospectus. Bibliography.

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Speculation and Ultimate Problems. It should, by now, be quite apparent that psychology is not a "finished science" in the meaning of the words which would be that ordinarily taken, namely, that all its facts and all its theories form a self-consistent whole, covering the entire field of research and offering a satisfactory, a balanced and a final explanation of everything. On the contrary, psychology is emphatically an unfinished science, a science which has only recently turned its back upon types of explanation and types of theory which belonged to its earlier history and its earlier associations with philosophy and theology. In so far as it were to become again dependent on introspection to a degree that would make the results of that introspecting dogmatically acceptable instead of being merely suggestions for investigation through more objective and quantitative methods, psychology would again become a more finished and better rounded-out body of knowledge but, as indicated, at a sacrifice of worthfulness and dependability and usefulness.

Speculation will always be a tool in psychology as it has been and is in other sciences, both those called social and those more emphatically physical, but speculation as a basis for objective research, speculation as a basis for testing, as a basis for investigation, never speculation as a basis for finished belief and final knowledge. This, to be sure, may mean, indeed probably does mean, that psychology, like other sciences, will never be complete, will always have loose ends, tags and unfinished business for, to the open mind, alert to the possibilities of still further investigation and still finer analysis, each and every product of research only suggests still further problems and still further possibilities. But while the theoretically discerned goal of final and complete knowledge may attract us and may motivate the individual, the realization that it is largely a theoretical goal and

that it may never be reached, in no sense lessens the task or the value of psychology as the science of human behavior. For, however rapidly the goal may flit from us as we advance in the knowledge of human nature that is scientific and objective, still the field and the actual knowledge known and becoming known grows always faster and faster; the further the end seems, the more we know of what is to be known; as the perspective widens out, so does the foreground.

We have frequently mentioned the fact that psychology and philosophy have been, in the past, and now also are often related. This is inevitable, and in no sense to be deprecated, provided only and always that the two be honestly recognized as competitors and yet co-operators for an explanation of the nature and business of living, as rivals and collaborators in the task of explaining what man is, what he does and why he does it, in terms of all the factors of heredity, environment, thought, wish, feeling, sense and emotions. There are philosophers who scorn psychology, and psychologists whose scorn for philosophy is, if possible, even greater than that of their rivals. All this seems unnecessary, unwise, and based on misunderstanding. Every science, however much it is science, is also a philosophy, in that it aims at explaining life and the problems of life, whether in a large sense, as in the case, say, of physics, or in a smaller sense as in the case, say of geology. Every science is a philosophy in that every science clearly indicates that from its knowledge, so far as it goes, certain inferences and certain implications may apparently be drawn. If these inferences are baldly and dogmatically assumed to be actually so; if they are, without further investigation and experimentation, accepted as such, one has, once more, a finished philosophy, but if they are taken merely as grounds for further investigation, for further search and thought, as a basis for further knowledge which may refute or establish more soundly the points at issue, one still remains with a philosophy, but a philosophy which, since it follows the tactics of science, is properly called a scientific philosophy, a philosophy of objective nature, a philosophy of fact as contrasted with a philosophy of whim and wish.[1]

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Philosophy and Psychology. But there is another way of looking at this important matter, important for several reasons; first,

[1] See, throughout, Dewey, *Reconstruction;* also, for more elaborate account, his *Experience and Nature.* For a less technical exposition of Dewey's point of view, see Hart. Confer, also, Weld, Barry.

because of the uncertainty concerning the proper domains of psychology and philosophy, secondly, because of the overlapping of the problems considered in both fields; thirdly, because of the antagonism the two points of view so frequently show, both in the personalities as well as in the utterances of students in each field; fourth, because of the undoubted fact that the philosopher is frequently a psychologist, no matter how poor a one, and the psychologist is always a philosopher, whether he will or no, and is usually, from the point of view of the philosopher, a very poor one indeed.

It is perfectly proper for the psychologist to repudiate philosophy, so long as he repudiates what he is able to avoid, but it is futile and even ludicrous for the psychologist to repudiate in one mood and at one time what, in another mood and at other times, he recklessly indulges in, and this is a frequent occurrence. One thing the psychologist can certainly repudiate and do so consistently, irrevocably and completely, and that is the traditional method of philosophy. The psychologist, in so far that is, as he is scientific and objective, can completely avoid the introspective, speculative, *a priori* methods that have, on the whole, though with recent commendable exceptions, characterized philosophy throughout its long history. But where he can repudiate methods, he cannot always do as well with other things, and he is constantly involved in matters which, because of their very nature, involve unpremeditated and inevitable contact with problems that are also philosophical. Thus, the psychologist who refuses to admit the existence of what is called "consciousness" is equally guilty of violence to the facts with the psychologist who claims to find the answer to all psychological problems in the dictates of that elusive something or other. Any definition of consciousness, at the present time, either directly or by avoidance, is philosophical. Still further, to be affiliated with that type of psychology which definitely denies the existence of anything but that which the sense can appreciate, is to be equally philosophical with those who claim the existence of other than materialistic things. And, either to assert or to deny the efficacy of consciousness as an agent and cause is to be definitely philosophical; indeed, a central problem in psychology, regardless of what the technical behaviorists of the stricter variety may say, is that of this very thing called consciousness, however we finally come to define it, and to refuse to consider it, and by implication to deny its existence, its worth, its possible significance, is to be definitely of a very decided philosophical school.

But all this is not to say that psychology is philosophy or

philosophy is psychology; far from it. It is to say that there are cross-relations, that there are inevitable times and places where, as psychologist, the investigator also becomes, whether he will or no, and whether he knows it or not, philosopher, and that, if he wishes to remain primarily psychologist and to have decent grounds for talking about psychology as a science, he must avoid the methods of philosophy in the historical and speculative sense of that term. Fundamentally, the distinction between psychology and philosophy is method rather than content; science and verbal, *a priori* philosophy, as methods, are complete antitheses, though as fields of thought and research they are always overlapping and often, in particular problems, identical. But any problem, historically or contemporaneously speaking, that is a problem in the field of philosophy, can be and more properly is also a problem in the field of psychology, with its different and more objective technique, though such a statement will, naturally, lead to the phrasing of its opposite by the professional philosopher. But while the philosopher is justified in claiming that he can and does give answers to many psychological problems, if he misses the statement above concerning method and science, he will miss the point. To restate the issue, in so far as the problems that are common to philosophy and psychology are treated according to the technique of the one or the other they then are properly called philosophical or psychological, but all problems of human thought, feeling and conduct in general, can be treated with objectivity, with repudiation of speculation or self-consistency as the basis for an answer, and in so far as they are thus treated they belong with psychology; the real basis of distinction is method, not content.

Philosophy may speculate concerning the theory of knowledge; may derive, speculatively, many contrasting epistomologies; psychology, as science, will treat of the same subject with a different method, and arrive at what is better called theory of learning, the learning process, the nature of thinking as a type of behavior, the study of language as a tool of communication, thus covering the same content but in an entirely different way, and arriving at results which, because they have been objectively obtained and not assumed *a priori*, are worth more in themselves and can be better used as the basis for further knowledge. Philosophy may speculate concerning freedom versus determinism, where psychology, in terms of biological findings, pursues a more objective path, and arrives at conclusions that have worth in terms of other previously tested knowledge. Logic and the laws of thought, the bases of beauty, the place and nature and signifi-

cance of religion, the existence and function of the soul, the meaning and purpose of destiny, the concept of progress and betterment, the basis of morals and law, all these and many other things can be treated, as they usually have been, from a frankly *a priori,* speculative point of view, philosophy in the traditional sense, or from an experimental, scientific point of view, psychology in the modern sense.[2]

The old association psychology was as speculative as some of the newer ideas of language habits may turn out to be; the older ideas of sensation, in the light of newer knowledge of brain and nerve action, are seen as hopelessly simple systems based to a great degree on speculation; much that Freud and the so-called psychoanalysts have written is almost pure mysticism; some of the assumptions involved in the testing of intelligence, and even the fundamental definitions of what is presumably being tested are as speculative as anything in philosophy; current discussion concerning images, the problems of dissociation, the body-mind problem are shot through and through with speculation, and in so far as they are thus speculative they are, to just that extent, non-scientific and philosophic. But the matters on which they touch are proper subject matter for psychology; indeed, they are psychological subject matter *par excellence,* in that unless such matters are satisfactorily and factually, objectively and scientifically treated and understood, then hardly even a beginning has been made of understanding the behavior of human beings. But they must be treated psychologically, not philosophically; objectively, not subjectively; as problems, not as verbal puzzles. As an example of a psychological-philosophical problem, it will be worth while briefly to examine the so-called 'Body-Mind' dispute.[3]

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The Body-Mind Problem. Perhaps no other problem has brought forth so much purely wordy discussion as that more commonly known as the "Body-Mind" problem, or the problem involving the relationship of the so-called "body" and the so-called "mind." The hyphenated phrases above are used because of the evident disagreement concerning even the definitions of

[2] See, particularly, Leary, throughout, and especially table, p. 82. Confer also the larger treatment in Part IV, concluding chapters.

[3] Confer, Moore, particularly Chs. IV to VI; Vaihinger, throughout, for general point of view, but particularly Chs. I to IV of the General Introduction, and Basic Principles of Part I; Dunlap, *Mysticism,* particularly Ch. III; Klemm, Part I. See McDowall, particularly Essays I to IV.

"body" and "mind." To define is notoriously difficult, for every definition to some extent at least assumes and infers much that in the best treatment of the subject would be left open to investigation. Try to define body without involving what, to some other equally intelligent and seemingly well informed thinker, is mind; and still worse, try to define mind without involving body. In this state of the question it is no wonder that the effort adequately to define the relationships of two poorly defined "things" has met with considerable failure. Incidently even to assume, on so little basis as most of the assumptions show, that there are such "things" as body and mind, and that there is a problem, smacks in itself of speculation and verbal distinctions which contradict the more unified situation of fact and experience.

It is interesting to realize that there are, speculatively and philosophically speaking, at least seven definitely different and mutually distinguishable theories concerning this dubious problem of the relationship of body and mind, ranging from pure materialism where thought is the by-product of neural action, to pure spiritualism where matter is but a mode of thought, and showing variations in every thinkable and conceivable direction. All these theories, with the details of which we need not concern ourselves here, are more or less efforts to settle, in advance of the proper knowledge of the facts, questions which can only be settled after the facts are known. In so far as we wish to make psychological distinctions between various types of conduct and call such behavior as that involved in solving calculus problems, mental, and that involved in lifting weights, physical, and to say, by virtue of definition, that the former uses the mind and the latter the body, we do less violence to the facts than to attempt to define the two terms apart from concrete behavior. Of course, it is apparent that such a distinction as the above is merely a relative one and that it posits no mind as such and no body as such but merely selects, out of the many acts of behavior which the organism can perform, some which it labels emphatically or relatively mental, others as emphatically or relatively physical. But since such a distinction does not attempt to define mind-in-itself, as such, or body as such, it does less harm than the other types of definition which first set up a catalogue of traits which each will respectively present and then attempt to show that such entities as are defined can be found in human behavior, each performing its proper act according to definition.

Putting this differently, the proper definitions of body and

mind (and this problem is but one example of many others equally confused in the present state of knowledge), will be found to emerge out of knowledge concerning human behavior, a knowledge that will be based on observation, experiment, scientific method, and not out of verbal speculation in advance of knowledge. We have seen much the same thing in our contrast between the ideas of association and those of the conditioned response, where the associational explanation was seen to be superficial, forced, inadequate and not in accord with the facts. One may defend the theory of a mind which is independent of the body, which resides in the body, which exists before the body, and which might equally well be called soul, anima, spirit or by a host of other names; one may defend such a theory, but in so doing one becomes, *ipso facto,* a traditional philosopher, good or bad as the case may be. The psychologist, as scientist, must base his distinctions, his definitions, on already observed fact, and in so far as unsupported and unfounded speculations are indulged in must label them for what they are and establish a better basis than the mere speculation before they become worthy of recognition in the field, or are used as bases for further hypotheses.

In science, the simple things come first, the grand theories last; the observation and concrete acquaintanceship with the facts first, the marshalling of them into orderly systematic form, last. In science we start with experience and end with experience; in philosophy we may ignore it, call it illusory, and deal with symbol and verbal substitute, creating through naming what objective experience denies or is lacking in. But, naturally, all the above, indeed this whole discussion of philosophy versus psychology is, in itself, partially philosophical. It is philosophical, in that it is discussing problems apart from empirical evidence and matter of fact reference, but it is also psychological in that it is insisting on the necessary evidence before conclusions are established, either for their own sake, or as a basis for further work. Speculation, as has been admitted, is in all things, in so far as we think at all, inevitable, natural and worth while; it is what we do with the fruits of that speculation that count, that make for trouble or for knowledge. But, naturally, this topic, in other and related but more objective forms, will receive further treatment later. We will meet with it, particularly, in our discussion of language and thinking where, to be sure, it can be dealt with far less speculatively.[4]

[4] See McDougall throughout, Ogden, Ch. II, Moore, J. S., Ch. VI. For those really interested in the whole problem of science versus philosophy,

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Prospectus. In our survey, then, of some of the applications of psychology to the fields of intelligence, the abnormal, the good and the beautiful, as well as in business and industry, we shall endeavor always to keep prominently in the foreground this point of view, namely, that for psychology to be a science, it must be akin in method and principle to those other sciences which have given us our knowledge of and our control over the external environment; and that such a knowledge of human nature as will give us an equal understanding and control of human beings and their behavior can be acquired in no different way than that whereby we have gained our present vast knowledge of nature; and that speculation must always be a means to an end, the end, namely, of greater surety of fact, greater understanding of real situations, and never merely the attempt to solve in words what has first been created through words.

This again brings up the whole question of the fundamental bases and assumptions of psychology as a science, with all the implications that arise in connection with its nature, its value and its use. This first Part has, naturally enough, been largely concerned with orientation, definition, argument pro and con of certain opposed and mutually exclusive points of view, and the tentative establishment of a program of investigation and a technique of approach for the more detailed and more definitely psychological chapters that follow. The book is frankly committed, both on the objective grounds of what appear to be sufficient concrete evidences in physiological and biological fact, and also on the more theoretical grounds of what seem to be the only possibilities of attaining to a systematic, inclusive and applicable science of human behavior, to a very definite and emphatic stressing in every connection, of synthesis and integration.

To state a criticism of modern psychology made elsewhere in different terms, psychology is apt, as plainly shown by the evidence of its literature, to become unduly atomistic and hence to verge toward mere physiology or at best biology, or else to sway toward the other extreme and, in the effort to be synthetic, become hopelessly and cloudily speculative and be, in fact,—literature; good or bad as the case may be, interesting or boring, depending on the writer. It is perfectly clear that the major

and of the worth of thinking in general, the book of Ward, particularly Chs. V, VIII, X and XI will be of value, though written in a frankly popular manner. See also Barry, Weld, Dunlap and Vailinger as above in Note (3).

portion of this Part I of the present book is definitely atomistic except in so far as warnings have been made that such atomism is not psychology and does not, as such, for all its exactness of detail, constitute psychology in the sense of being either a science of human behavior or a science of the adjustment of human personality to its complexities of living. Later chapters will increasingly stress the synthetic aspects of personality and its adjustments and if, in so doing, they sometimes apparently lose sight of the facts of structure which we have so definitely emphasized in this portion, it is not because syntheses should or must lose sight of analysis and of objective fact, but simply that, at the moment and on the basis of the present status of the subject, such detailed knowledge of the facts of higher and more complex types and species of behavior is simply not to be had.

But this, most emphatically, does not mean that we must rest content with analysis and with relatively unrelated details of the behavior of this or that theoretically isolated portion of the human organism any more than it means we should, through disgust, impatience or the yearning for verbal exposition of our frustrated hopes, indulge in such wild and transcendental speculations that what facts we already do have are completely lost sight of. Speculation, as we have already pointed out, is not only defensible but indeed the sensible resource of the wise man when he cannot have a concrete and objectively demonstrable immediate answer to his problems; but such speculation will be in terms of the facts in two ways,—in terms of the facts, first, as they are now known, and in terms of the facts, secondly, as they can be ascertained and are actually found on the basis of new activity directed on the basis of the speculative theory. Facts and speculation must go hand in hand, the first pointing to the second which, in turn, points back to more facts. If we do this, and do it as consistently and as persistently as have the workers in the field of so-called external nature, we will be the sooner in a position to have a body of knowledge which will not only be in terms of physiology and biology but which, because it also concerns itself with the integrated behavior of personalities, is emphatically and properly to be called a psychology.

One key to the understanding of the point of view which this text endeavors to develop, now in terms of fact and concrete knowledge, now in terms of speculation and the consideration of alternate possibilities of explanation which can be verified or tested in terms of experiment and observation, is the word 'adjustment'. All life, all organisms adjust; we are adjusted in an exact and a detailed sense always and everywhere; when we are

sick, whether mentally or physically, when we are happy or sad, depressed or elated, we are always adjusted. It is necessary, then, to add to this concept of adjustment a certain qualitative aspect; there is good and there is bad adjustment. And having added this, it is immediately clear that what is to be called bad and what, on the other hand, is to be called good with reference to adjustment, depends on many, many other factors and considerations. A large part of this book will be concerned, after further preliminary ideas are examined, with this question of the goodness or the badness of certain wide-spread, indeed almost universal types of adjustment, and simply because, as we have shown above, any psychology that is to avoid the sterile atomism of a mere physiology must deal with the integrated personality, and since the integrated personality deals with these types and species of adjustment, psychology must emphatically deal with them too.

This accounts for the frequent and indeed insistent comparison of philosophy and psychology and for the constant effort to show how thought may be, at one and the same time, speculative and yet properly scientific; in a word, how the technique of science and its objectivity may be applied to the situations in which the types and systems of speculation in question,—whether called art, religion, philosophy, mysticism, or what not, have arisen and matured and become habits of adjustment. We all live by these things, whether to a total or a just appreciable degree; we have all grown up under their partial domination, they have conditioned us all whether later and wiser experience has reconditioned us and them or not, and we all see about us, in institution and law, in totem and taboo, in restriction and inhibition, their effect and their power. The abnormal and the normal, the mentally superior and the mentally deficient, alike show traces, great or small, of the effect of these older creations of the human mind working on its experience and sorting it out into patterns and maps and guide-books.

And, it is claimed, any system of thought, regardless of what it is called, regardless of what spoken or written title we give it, traditionally, which concerns itself with the adjustment of human nature to its environment, is emphatically psychology. It is often, indeed usually, very poor psychology, but a psychology for all that, for it deals with human intelligence, human drives, needs, desires, wants, ideals, hopes, frustrations and aspirations. And, certainly, whatever deals with these things is psychology. It remains, however, for the good psychologist, for the psychologist who knows the technique of science, who can

distinguish between fact and fable, speculation and concrete demonstrable knowledge, to work over the field of these ancient and honorable, but often deficient and sometimes merely placating or even destructive systems of thought and species of adjustment, and sort them out in terms of the technique of science and the facts of human nature. This, in short, is the ultimate purpose of this particular approach to the science of psychology and while it is not, for even a moment, implied that anything but the merest beginning of a suggestion for further research has been made, if it has done that, then it has done what it set out to do.[5]

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[5] See, in general, the references in the notes to Ch. I and also the following for various summary and preparatory points of view: Ayres, Barry, Dewey (*Reconstruction* for simpler summary and *Experience* for profounder analysis), Moore, J. S., Ogden, Vaihinger, (as above), Ward, Weld, Stephen. Confer Roback, Berman and Wickham for specific criticisms of general point of view of this whole introductory Part I. See also Sidis, Moore, J. S., Moore, D. T. V., and Dunlap, *Old and New.*

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"If the developed nervous systems of (the most elevated) creatures have gained their complex structures and functions little by little; then, necessarily, the involved forms of consciousness which are the correlates of these complex structures and functions must have arisen by degrees. And as it is impossible to comprehend the organization of the body in general, or of the nervous system in particular, without tracing its successive stages of complication; so must it be impossible to comprehend mental organization without similarly tracing its stages."

SPENCER

CHAPTER I

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[1]

Learning and Structures. As contrasted with what is native, is that which is acquired, and the term "learning" emphatically characterizes and designates the material and the acts which are in the latter category. Whatever we know, can do, are able to remember or perform, if it is not native, then it has been learned. But, as has been constantly emphasized, whatever we do, whether it be an act that is native and unlearned, or one that is acquired and therefore learned, we do on the basis of structure or the modifications of that structure brought about through experience in the broadest sense of that term. Learning thus depends, from our point of view, on the interactivity and play of original structure, the stimuli which have been offered it, the responses which have been made and the changes which have been brought about by such experiences and such responses, the whole process being continuous and becoming ever increasingly complex in the maturing individual. Learning depends on receptors, connectors, effectors, and the new circuits introduced through the modifying effects of conditioning; old circuits are changed, new ones established.

This is to say, in different words, that defects or peculiarities in receptors, connectors or effectors will, in part, determine what can be learned, what is actually learned, how it is learned, how quickly, how long it is retained; structure sets as definite a limit to learning as does opportunity. This is the contrast, again, of heredity and environment; we cannot learn what there is no opportunity of learning, whether we understand the word opportunity in an environmental or a structural sense. But, where previous chapters have been more emphatically concerned with structure and its nature, we are equally concerned, in the case of learning, with the environment and its stimuli. Nor must the

sense of the term learning be taken too narrowly; we learn to read, to swim, to climb trees, to play football and the piano, to speak foreign languages, to play poker, to hate ignorance, to love our neighbors, to fear God, to break the laws, to resign ourselves to fate. We learn these things in the sense that we could do none of them through the circuits due to nature, that all of them are due to modifications and conditionings of original circuits, that none of them are due merely to the gradual developing or maturing of original structure, apart from the effects of the environment. To be sure, the more popular sense of the term "learnèd" is a type of conduct involving ideas, language, thought, verbal memory, and the like but, as we shall see, this is but one phase of learning, and a man may be as "learnèd" with respect to percepts, or movements, as another with respect to ideas and verbal memories. There is motor learning, there is sensory learning, there is emotional learning; as a matter of fact, and as usual, such distinctions are more to be taken as emphases than mutually disjunctive divisions; probably all learning is, in some respects and to some degree, and at one and the same time, motor, sensory and emotional. That is, whatever conditionings we undergo involve receptors, connectors and effectors; every neural pattern, whether it is quite new or merely a modification of an old one that has been acquired previously or was native, is in touch with receptors and effectors through some synapse. But, in learning, say, to dance, we are interested in the final product of motor co-ordination rather than in the sensory or perceptual stimuli involved; in learning to solve problems in calculus, or in learning, "by heart", the dates of the Presidents of the United States, we are interested primarily in the final verbal accomplishment; in learning to control a bad temper, we are interested primarily in emotional values; but in each case the learning is broader than the emphasis.[1]

[2]

Learning and Memory. It is true that we also make a distinction, on somewhat the above basis of relative emphasis, between what we ordinarily call memory as opposed to learning. Thus, ordinarily, we do not think of learning to swim as a process of memorizing certain co-ordinated moves of legs, arms, head and shoulders, though we do use either learning or memorizing as the term to describe the acquiring of a new language. That

[1] Koffka, Ch. IV; Skinner, Gast and Skinner, Chs. IX, X, XI; Gates, Chs. X, XI, XII; Thorndike, Part II, particularly Chs. X, XI, XII; Wood-

is, we see that all memory is learning, but we do not always realize that all learning is also memory, though not necessarily verbal. Perhaps this is because the very term memory is itself loosely used, there being at least three senses in which we may take the word. Thus, the word memory may be used when we have in mind what is better called a memory-trace, i.e., that neural modification or structural change, on the basis of which we respond to a given stimulus, verbal or otherwise. We respond to a given stimulus, in any instance, (apart from circumstances more complicated and involving attempts to evade the stimulus) because through experience and conditioning a connection exists between the stimulus and a certain vocal or motor response; there is a pattern, a circuit, a trace, an actual physiological structural basis for the response. But we also use memory in the sense of the phrase "to remember." Thus, one remembers the telephone of his friend; that is, is able, when asked what it is, to make a verbal or written response. This act of "remembering" is, of course, the functional aspect of the structural trace. Finally, one may, in terms of such a trace, and when consciously or deliberately responding to a question asking for the response in connection with such a trace, also recognize, consciously O. K. the response as being the correct one. This is memory in a more sophisticated sense, involving some degree of introspection, though the response may, of course, be contrary to fact, and the introspection, as is the case so frequently, worse than useless.

The point to appreciate, in all this, is that again a distinction is made simply on the basis of usage and convenience and relative emphasis; all learning is modification, and memory, in the ordinary sense, is but one kind of learning. The fact that perhaps the bulk of man's learning is in terms of words to which we are prone to conventionally apply the sub-term memory should not confuse us as to the facts. All learning is, as we shall see, fundamentally alike; all goes according to the same laws; that is, the generalizations we can derive concerning learning apply alike to all types and all instances. In this connection the distinctions above described are often called, retention, recall and recognition. But memory and learning alike, however we prefer to distinguish them, are fundamentally types of structurally determined behavior; we are able to behave in terms of the modifications due to previous experiences, which previous ex-

worth, *Psychology,* Ch. XIII; Russell, Part I, particularly, Ch. III; Ogden, Ch. VI. See, also, throughout, Colvin, and appropriate chapters in Watson, *Behavior,* Holmes, Jennings, Washburn. For summary, see Hunter, Part I, Ch. I.

periences on the basis of the then existent condition of the organism, produced the modifications in question. One use of these words may stress the functional aspect of memory and learning; another the structural; but both emphases refer to the same basic fact: modification.

We are, all of us, and all the time, learning. Not necessarily always deliberately, consciously learning, but always learning in the sense that we are always being modified. But such casual and uncontrolled learning, subject to none of the precise observational technique of the laboratory, gives us little or nothing on which to base theories concerning the quantitative and qualitative differences in learning from person to person, from time to time, from subject to subject, and tell us nothing, either, concerning how the learning, say, of animals or children, differs from or compares with that of adults. In order to know what an animal, human or otherwise, can learn, it is necessary to conduct actual experiments, to observe the conditions under which they learn, what they learn, how long it takes, how long such learning persists, what is its relation to native traits, and what limits to learning exist. A typical experiment of this kind, shown by Watson, is that in which a white rat, an animal admirably suited for psychological experiments, is placed in a box-maze, that is, a large box which is divided up into smaller chambers and pathways by partitions. Food is placed in one section, the rat in another; the "problem" of the rat, i.e., the task he has to learn, is to get the food, his hunger being the native drive which impels him toward activity. There are many subdivisions into which the rat can run, before he learns which is the right path, leading to blank walls where no food is to be found. There is one and usually only one path, often long and extremely tortuous, whereby the rat can come to the food, thus "solving" his personal problem, namely, of satisfying his hunger.[2]

[3]

How Animals Learn. The initial behavior of a rat, in such a maze, is properly called random. The rat runs here and there, returns on previously used and useless trails, doubles about, goes in and out of the blind alleys. Where the actual length of such a maze, as constructed, for example, by Watson, may be some 40 feet, the actual total path traversed by the rat before he first

[2] As for Note (I); particularly, throughout, Watson, *Behavior,* Holmes, *Studies,* Jennings, Washburn. See, also, Murchison, Chs. VI, VII and VIII. Carr, Ch. V. Also, Woodworth, *Dynamic,* Ch. IV. See Semon, both references, for *engram* theory of memory and its structural aspects.

reaches the food may sum up to as high as 100 times the minimum distance when the correct path is used, and the time may amount to over 15 minutes. But that the experience, haphazard as it was, has produced some change in the rat, is easily demonstrated by once more placing the animal at the starting place; he then takes less time, makes fewer errors, is more successful in attaining the food with less effort. Successive trials usually show still further diminutions in time and in distance covered and in errors made, so that some 30 trials may result in the attaining of the ability to run the maze with no errors, and in a fraction of a minute. We may state the results in several different ways: the rat has solved his problem; he has learned to run the maze; he has formed a habit; he has been modified as regards his reactions to the various stimuli of the box as a whole and the corners and walls as details.

We will, for the time being, pass by the phrase "solved his problem," returning to it later in the light of other considerations. But that he has learned something is clear; it is equally clear that he has formed a habit; and there can be no question that he has been conditioned, modified by the experience though, naturally, we cannot actually point out the neurons involved and the new patterns and connections formed in the nervous system. But the rat is changed structurally in the same sense that Pavlov's dog was through the process of conditioning, though here, not a reflex, but a rather complicated train of conduct is involved. The rat, like the dog in Pavlov's conditioned response experiment, needed time; the learning of the maze was not an instantaneous occurrence; the learning was gradual. Nor did the rat "reason" any more than the dog; in both cases the explanation must be found in terms of receptors, effectors and connections between them, in terms, that is, of the formula S——R, and no imaginary, speculative power may be invoked to give an answer. To say the animal solved his problem by "reasoning" is really to say nothing, for unless we reduce the term reasoning to an inventory of connections, circuits, relationships between receptors and effectors, we have merely used language to cover our ignorance. Incidentally, it is too "anthropomorphic."

But the rat had many receptors, any one or group of which might have been part of the modified and conditioned structure; eyes, ears, nose, the feelers or vibrissae, and the proprioceptive receptors, i.e., the sense of kinaesthesia in the muscles, and the semi-circular canals of the ears. Experiments, also conducted by Watson, involving the elimination of each of these senses

except the latter, gave negative evidence of the basic proprioceptive nature of the learning. Thus, blinded rats, or rats learning in complete darkness, did as well, and learned as rapidly, as those having the help of the sense of sight. Rats with the sense of smell destroyed did as well as those with smell; cutting off the vibrissae had no effect, nor did destroying the sense of hearing. But this was so far merely negative evidence, in that eliminating the other senses left apparently but the one on the basis of which the rats could learn the maze. But positive evidence was found when, in further experiments, rats who had learned a given maze were introduced into others which had the same internal arrangements with the exception of the lengths of the pathways between turns. It was found that those which had learned to turn at a given distance, turned too soon when the paths were lengthened and too late when they were shortened, passing by the cross-entrances. Thus, directly and indirectly, it became clear that the proprioceptors were the basis of this particular type of learning.

Other investigators, however, do not completely agree with these relatively simple findings. They hold, and with some basis in factual evidence, that such learning as is involved in thus running a maze is based also on other senses, and that various other factors, quite apart from the box itself, also influence the results. While the rats could and did get along without any given sense organ none the less it is probably true, in the light of other experiments, that all the sense organs can and usually do co-operate to the learning of such a habit. But this is probably brought out more clearly in another type of situation, in which the animal has a different and, in a sense, more complex problem to "solve." In this type of experiment, shown perhaps best by Thorndike, a hungry animal is placed in a cage, escape from which can only be accomplished by pushing a given latch, stepping on a certain button or switch, perhaps concealed under paper or sawdust, or reaching outside and pulling a string, or through similar equally simple means. Such an hungry animal, placed in such a box or cage, with food outside near enough to smell, at first indulges in much the same random behavior that was noted in the case of the rat in the maze. It does everything it can; runs, jumps, scratches, pulls, pushes, bites; in a word, tries everything within its behavior capacity. This apparently useless conduct eventually results usually in getting out and obtaining the food. If the animal is again placed in the same situation, we find the same quantitative results obtaining as with the rat; the time is diminished, errors eliminated, success

sooner obtained. Soon the animal has learned such habits with reference to such a cage that he can at once get out when placed in it. Here we manifestly have a more complex situation, where perhaps many senses function, certainly more than one, and it is a situation, too, more comparable to those which we humans encounter constantly.

Köhler's experiments with apes, as well as those of Yerkes, are another type of investigation of learning that is still more complex, still more allied to what we are wont to think of as human learning, and approaches close to what, in a specifically human sense, we call "thinking" or "reasoning." Whether we will call what the rats do in the mazes, or the cats in the cages, reasoning or whether we assume it implies thinking, depends in great measure on how we define these elusive terms, and upon these same definitions will also depend our conclusions concerning the same abilities in the apes. But we are not concerned here, immediately, with reasoning or thinking, but with learning, namely, the establishment of habits, the attainment of modifications in structure, based on original capacities, or on previously attained modifications of them. One of Köhler's apes, when allowed to see some food buried outside the cage, just beyond the reach of his extended arms, and even when then removed for some eighteen hours from the situation, and then returned to the cage, remembered the food, attempted to reach it, and finally made use of a stick previously placed in the slats of the roof to extend his reach, unearth the food, and drag it within the cage. This shows the same retention of traces of previous experience, the same ability to learn, which characterized the simpler behavior of the rats and cats; it involves memory, shows the formation of habits; in short, is learning. Again, another ape was allowed to observe the behavior of Köhler himself in placing a box underneath some food hanging from the roof and beyond the reach of even the highest jump. The ape soon learned from this observation to do the same thing; another ape learned to unfasten a hook that kept a door shut, again getting food as a result of this learning. In each case, however it was done, (and this remains to be considered in more detail), the result is properly to be called learning since, after the experience, the ape or apes showed the ability to more or less consistently do the same thing again and again, avoiding the delays and the errors of the earlier attempts before the act had been learned.

The above experiments are, of course, only a few of the many, as regards type and detail, that have been performed by the psychologist interested in this matter of animal learning; but,

out of a consideration of all of them, several general psychological problems emerge, each of which will need separate investigation and consideration. Thus, What "causes" an animal to learn, i.e., what are the drives? Secondly, How and why do acts and movements that result in success persist? Thirdly, the reverse of the above, Why and how do movements that are useless tend to be discarded, so that the eventual behavior is practically free from random and inconsequential movements and is definitely adapted to the attainment of the end or purpose, namely, the satisfaction of the drive? There is a tremendously voluminous literature on the subject, many conflicting theories, differing widely from one another. We will now consider several of them from the point of view of S——R in accordance with our general program.[3]

[4]

Theories of Learning. Regardless of what animals, human or otherwise, are observed to learn, regardless, too, of what is being learned, there are certain fundamental generalities, so-called laws, which can be derived, deductively or inductively, from a consideration of the behavior in question, and which will then apply to all learning as learning, what ever its degree of profundity, complexity or abstractness. These generalizations, or derived principles or laws differ profoundly, to be sure, with reference to their value; some are almost purely speculative, some more nearly in accord with the necessary objectivity of scientific procedure. Thus, the so-called "pleasure-pain" theory, one of the oldest and perhaps most widely and frequently invoked theories, accounts for learning on the basis of the avoidance of pain and the seeking of pleasure. Putting this in more detail it means that the pleasure or satisfaction which results when a desired goal is achieved brings it about that all the acts and sub-acts which contributed to the attaining of the goal will be retained, and the pain that results from non-achievement brings it about, contrariwise, that acts and sub-acts which interfered, are dropped. This is sometimes stated to mean that the desire to achieve pleasure and the desire to avoid pain furnish the motivation, so that acts contributing to actual pleasure are retained, those resulting in pain eliminated, all more or less deliberately.

But much the same criticism of this theory can be made as

[3] As for Note (I); particularly, throughout, Watson, *Behavior,* Holmes, *Studies,* Jennings, Washburn. See, also, Murchison, Chs. VI, VII and VIII; Carr, Ch. V; Woodworth, *Dynamic,* Ch. IV.

we applied in the instance of the theory of the association of ideas as a rival explanation with that of the conditioned response in learning. The pleasure-pain theory is too superficial, is merely descriptive on a surface level, and does not show how a desire for pleasure or a distaste for pain can, as ideas or desires, influence muscles or result in neural modification, the opening of new circuits, or the making of additions to old ones. In the case of the rats in the maze, how can any idea of pleasure or pain (even granting rats have ideas!) change the conduct of the rat so that he will no longer go into a given blind alley? And has the rat any preconceived idea of pleasure to be obtained or pain to be avoided? The old introspective pitfall is also here, for undoubtedly, basing the argument merely on introspection, a good case can be made out for the theory, at least in the case of human learning, though it is difficult, even in humans, to see how consciousness of either pain or pleasure (as ideas, not as actual body states) can lead to conduct. Still further, if we apply the pleasure-pain theory to learning, any complicated act of behavior may be split up into its components, and the theory should apply to each such fragment. But many simple acts, contributory to a larger act, which larger act may result in pain or pleasure, are themselves, as smaller acts, relatively or entirely lacking in the accompaniment of either pain or pleasure; they are, as such, so nearly neutral that only dubious introspection would apply either term to them. Still further, many of them are unaccompanied by any discernible or critical consciousness, are automatic, mechanical, and yet may be retained as elements in the final complex act of behavior or eliminated. But it is these very acts, these very elements in the building of a complex act, these separate items in the formation of a habit, these smaller pieces of some total act of learning, whose retention is necessary to account for.

While this general theory of the pleasure-pain variety will not fit the facts or satisfactorily explain all that is involved, a modification of it, due to Thorndike, comes nearer in many respects to doing so. Thorndike gives three principles or laws; readiness, exercise (use and disuse) and effect. The law of exercise (use or disuse) is clearly phrased on analogy with the using of muscles, and need not concern us here further; it is the "effect" aspect of the laws which are our present interest. By effect or consequences, Thorndike means that an act which is accompanied by or immediately followed by satisfaction or consummation (pleasure) will be retained and repeated; one which is accompanied by or immediately followed by annoyance or dis-satisfaction (pain) will be discarded, eliminated. Here, there

is not a preconceived, consciously desired pleasure, or a consciously foreseen possibility of pain to be avoided, but a pain or a pleasure which results, ipso facto, as a consequence of the act, the behavior. It comes of itself because of the nature of the act and its relations to the organism and environment. It is a natural result in terms of organism and situation; ideas of pain or pleasure do not function, the actual sensations or perceptions, when and if they are present, are all that is involved. But, again, the same criticism may be made, in part, as the above, namely, all acts do not seem to have this definitely satisfying or annoying aspect; many are, so far as can be determined, quite neutral, and yet may be very important elements in the final achieved act of learning. Also, the use of the term satisfying (or annoying) may become tautological; if we look at the satisfaction side, we say an animal does so and so because it is satisfying but we can also say that it is satisfying because the animal does it. This gets us nowhere, and again fails to approach the underlying structures and mechanisms; it is too verbal, though a tremendously better statement than the older unmodified pleasure-pain theory. But it approaches the problem of structure just to that degree that it does not involve conscious pre-representation of pleasure or pain, but simply actual pleasure (satisfaction) or pain (annoyance) in terms of the reaction of whatever structure is involved, at the moment and in the situation. It makes possible, as will shortly be seen, a new and wider extension of the principles involved in the Pavlov experiment, and needs only slight modification to apply to complex, drawnout acts of learning. But to come back to the rats; there, whether pain or pleasure is involved, we certainly cannot say that there is definite awareness of either as such; however much rats or cats may be guided by pleasure or pain, and certainly some simple learning can take place in terms of them, we cannot build a theory on an assumption of any such conscious factors. Not that Thorndike emphasizes the conscious element; on the contrary he does not, though others have. The statement of the theory need involve no element of consciousness; it simply states that those acts which tend to produce a satisfying bodily condition tend to be preserved; those that do not, are eliminated. But while this is, on the whole, demonstrably true, it leaves unsolved many aspects of the learning of complicated acts such as those we have described.

Two other theories, resembling one another to some extent, add something to that of Thorndike; the congruity theory of Holmes, and the conformation-inhibition theory of Hobhouse. Thus, to sketch the Hobhouse theory, the rat is observed to

enter a cul-de-sac, and then to run out; these two acts may be thought of as mutually antagonistic or inconsistent; doing one, the other cannot be done at the same instant; each inhibits the other. Hobhouse does not specify, in such a situation, either pain, annoyance, pleasure or satisfaction; there is no necessity of positing anything conscious; there is simply our observed fact of the antagonistic movements. On the other hand, running up a path which, when ended, leads on to another does not result in an antagonistic retreat; the act is confirmed instead of inhibited. Thus, as another example, observe chicks pecking at small objects, prior to any experience which would imply that they have already learned to distinguish bad from good food, i.e., they have, as yet, no habits and have learned nothing as regards food. They peck, at first, and with equal facility, at real food and at unpleasant substances. When the unpleasant is picked up, an inhibitory act of dropping it, rejecting it, is indulged in; when good food is pecked at, confirmatory actions of swallowing it result. Now, it is quite apparent, that while Hobhouse does not specifically mention pleasure or pain, the last example certainly implies the presence of something of that sort, but the way in which the theory is phrased pays attention to and lays emphasis on behavior rather than verbal distinctions introspectively and speculatively read into it by the observer, and is more concerned with structure and its functioning than with accompanying body or mind states. In short, it is more closely related, as a type of explanation, to the facts of the conditioned response, as we have already explained them. Holmes, building, in part, on Hobhouse and Morgan, advances what he calls the congruity theory, one based on the observation of the elimination of unfitting, incongruous and unorganized movements, and the perseverance of fitting, congruous movements which can be organized into a larger whole. The elimination side is quite similar to that of the Hobhouse theory, but Holmes tries still further to get away from the pleasure-pain ideas involved in the congruous elements of a learning process and, instead, offers, as explanation, the theory that a pecking which results in bringing to the mouth a substance which does not lead to rejection, does lead to swallowing. Pecking and swallowing form normal elements of a "chain reflex" unless something interferes; when one link is set off, the remainder tends to go off. The movement which results in a painful stimulus is dropped out, not because of the idea of the pain, but because the movement which originally brought the pain was followed by an antagonistic, instead of a congruous movement involving further structures associated with it. This is practically to say

that an act is always either retained or dropped out; or that all acts are either inhibitory or congruous, which is satisfactory so far as it goes, but does not say enough. Whether reinforcement or inhibition takes place depends on whether a reaction and the secondary associated responses tend to "harmonize" or not. This is not exactly saying that when it happens, it happens; it is not mere verbal tautology, but it is certainly not yet a complete and perfectly satisfactory theory or explanation.

Coming back to the matter of drives, or motor-sets, as they are often called, another theory exists, having several slightly different forms; that of Woodworth being, perhaps, the most satisfactory and objective. In this theory, the drive, say hunger, furnishes the energy, the unrest, the background for persistent, random movements seeking the satisfaction of the hunger. To be sure, great care must be taken not to understand a conscious, deliberate foreseen end in the condition of the rat. Its conduct is purposive as seen by the observer, but as far as the rat goes it is random and persistent merely. On this basis Woodworth claims that the movements which facilitate the getting of the food persist, those that do not are eliminated. But again the explanation is lacking in completeness and clearness, and there is no satisfactory explanation of the fact that a given response, midway say in the process of learning the maze when food is not obtained, persists as a part of the final correct running, or that another equally unrewarded, at the time, by food-getting, is dropped.

Other theories exist, differing in assumptions, conclusions and reasoning; thus Watson's "frequency-recency" theory, criticized by Thorndike and experimentally disproven by several investigators; Peterson's "completeness of response" theory, with its analogy to a stream filling up interstices in a channel with side openings; Carr's "intensity" theory, and a host of others. In each and every case, it is certainly fair to comment, there is more theory than there is demonstrable fact. In the sense that we can time animals, count the number of errors before success is attained, draw graphs of this quantitative side of the subject, compare the learning abilities of different animals, we know a great deal about animal learning. But in the sense of being able to give a complete and satisfactory account, in terms of structure and function, that will cover adequately all aspects of the problem, we know little. There is no theory of learning which covers all the facts in terms on S——R, native or acquired. Where we know the stimuli, or the drives, or the responses, we often do not know what bonds, if any, are formed, or how, or to

what number. One investigator, Watson, even claims that no new bonds are formed, that nature supplies enough and that learning is really learning to use the proper ones out of those already there.[4]

[5]

A Proposed New Theory of Learning. The writer, on the basis of some unpublished experiments with cats and some investigations of motor-maze problems with adults, is inclined to think that the general theory of the conditioned response will suffice, with some additional experimentation under new conditions, to explain learning of the maze type as well as learning in general. Several considerations are involved. First, Pavlov's dog may of course, be said to have "learned" to salivate when he heard a bell, and learned to do so either immediately, after a delay, or in terms of a trace and, depending on the experimental conditions, to either react specifically to one and only one stimulus, or to any stimulus somewhat resembling the original, thus showing irradiation. But, of course, this is really too simple a statement. The dog really learned to salivate when he was in a certain box, in a certain position, when this was so and that was so and when, also, a bell was rung; that is, it is really a complex situation, not a simple stimulus which sets off the conditioned response. Now, let us assume that in running a given maze there are some ten movements which can be made, say, a, b, c, d, etc. The letter "a" stands for running straight forward from the starting location to a certain point; "b" represents, say, turning to the right, "c" turning to the left, and so on, the last letter, "j" representing running straight to the food, consummating the drive and adjustment effort. As we have said, any given response can also be thought of as a partial stimulus to the next response; thus, in repeating a poem, any response in the form of a given line or word is also a stimulus to set off the next word or line. Now, let the animal run in the maze and indulge, under the drive of hunger, in any and all possible "random" movements. Let the animal, as it will eventually, "get there," regardless of the repetitions and errors made. Whatever its path, and regardless of whether there were errors, suppose that the combination of turns, say "a-b-d-f-h-j," with two wrong movements, is finally rewarded. Any other path, with any other wrong movements, so long as it finally ends with "j" is also rewarded; food is obtained, adjustment reached, the drive consummated. Putting this in terms of the present situation, it means that certain movements which

[4] As above, particularly Note (3). Also, Koffka, Ch. IV.

are the responses to certain just previous stimuli in the form of colors, odors, and what not, themselves become partial stimuli to new movements which lead to still further movements and, at one given spot, to food and satisfaction. Consider the last turn "j"; every time the animal made the movement "j," on the basis of the just previous response and the visual or other stimuli offered at and just prior to that point, he got food. But just before he made the turn "j" he made another response which as we have just said constituted a partial stimulus to make that particular turn "j." These stimuli leading to making the turn "j" are the conditioning stimuli, the turn "j" is itself the conditioned response, the food the unconditioned stimulus and reward. The stimuli coming through exteroceptors plus those due to proprioceptive activities (based on still earlier movements) correspond to the bell, the movement of turning into "j" corresponds to the salivation of Pavlov's situations of the "trace" variety. This process is carried backwards; the animal learns the last part of the maze first; the first part, (ignoring, of course, the initial non-choice forward run to the first doubtful selective place) last of all. In short, learning a complicated motor act involves learning the various steps in reverse order.

This can, of course, be stated differently and in more general terms. If we use the word association, and mean by association a pattern arrangement, i.e., an actual structural involvement and change in connections from receptors through a center or centers, and thence to effectors, we can verbally give a simpler summary. Thus, coming back to Pavlov's dog, it is clear that a certain element of a complex situation—stimulus, a bell, and the receptor-afferent paths in connection with it, came finally to be joined up with certain center patterns and with effector-efferent paths that led to the functioning of the salivary glands. The dog associated heretofore unconnected neural paths, that is, formed a unified pattern which came to include not merely the smell of meat but a sound of a bell as a sufficient stimulus to set off the saliva glands. There is no conscious or verbal or ideational element here as a causal factor; we are using the term association in the structural-pattern sense of actual changes in circuits and connections. And, it will be remembered, such patterns of learned response may be in terms of simultaneous stimuli, or in terms of a trace.

Now, in the case of the cat in the maze, we have a situation, almost exactly similar, but more complicated. The stimuli of the just prior to the last movement-turn, (which last turn is invariably rewarded with food), become associated, i.e., joined

in a pattern with the movement of the last turn, since this last turn, as said, is always rewarded with food. This is a trace conditioning, i.e., a pattern of behavior formed in terms of a trace remaining from the just previous stimuli-response experiences. When this compound pattern is well established, the last-turn-and-the-next-to-the-last then becomes the pattern to which, on the same basis of argument and experience, the third from the last is added, so proceeding backwards to the initial non-choice movement or, if there is an initial choice of right or left, or what not, the complex learning pattern comes, last of all, to include that choice, so that, as said in the beginning, the cat learns the problem from the consummating end backwards to the innocuous beginning. This does away with the difficulties mentioned in the previous discussions of how inconsequential elements in the early parts of the maze are learned; they are actually not learned till they become, in virtue of the prior and rewarded learning of movements beyond them, actually as consequential as any other. It is also clearly apparent that negative conditionings, or inhibitions, are produced at the same time and in terms of the same considerations; also, of course, in reverse order. Thus, a negative conditioning is set up for the wrong turn (if any) just prior to or at the same point as the final last correct turn which becomes rewarded, since this last incorrect choice is not adequately rewarded and does not result in drive consummation. So, going backwards, with each parallel or coincident possibility of wrong choice. Naturally, one cannot separate out the elements of conditioning in terms of inhibition as contrasted with those in terms of consummation; probably both operate to produce the final perfected run from beginning to end and the attainment of food.

Naturally, with cats, one cannot add any further evidence, however dubious, in the form of verbal recollections of comments, or introspective and retrospective analysis. But with humans learning a maze, in the form of a visual or plain motor task, running a pointer through the intricacies of the apparatus, one can and does get significant material on these bases and which, in the light of observed behavior by the experimenter, appears worthy of credence. Thus, parallel with an objectively observed greater accuracy and speed of movement in the last turns, the subjects report, almost universally, that they consistently feel, after the first success, however complicated by errors and repetitions the earlier portions of the problem still remain, a greater feeling of security and sense of at-home-ness as they approach the end. That is, long before they have solved the situation as a complete whole, and even while they are still

fumbling about with errors and repetitions in the first stages of the maze, as they approach the end they report, introspectively and retrospectively, a feeling and sense of knowing better what to do and how to do it, which is, as we have already said supported by the observed greater ease and speed of activity in the stages in question. They then add another element to this learned portion, and then another, reporting the same increased sense of ability as they thus, like the cat, add new elements backwards to the beginning. To be sure, language in the case of human beings adds other complications which we will examine later, and from several points of view; but apart from this complicating aspect, the situation shows itself as identical with that of the rats. Humans, like cats, learn such complicated problem-situations, with initial innocuous, non-consummatory elements, backwards.

It is also noticeable that a child, set such a task as that of learning by heart a long poem, will show the same phenomena, if and when the situation and circumstances are made to match those described above. That is, if and when such a child is rewarded, by petting or praise or otherwise, for each successful rendition of the final line of the poem, however much stumbling there is in the process of reaching that far, it will be noticed that preceding lines are sooner added than if the correct rendition of the last line is ignored and the child's attention called merely to the earlier errors. With each such repetition, there is a characteristic "rushing through" of the well-learned and adequately rewarded last line recital, the situation becoming constantly more complex with the addition of each preceding line until the whole is finally thus learned backwards though, of course, recited forwards. It would seem that there are, indeed, many unknown and untried possibilities of general learning involved here, but the writer has not yet followed many of them up to such conclusions as are worth discussing; much more experimental work remains to be done. Also, as we have said, the complications of "language," both from the point of view of its aid in such types of learning as we have been discussing (the maze), and also from the point of view of language itself as an adequate and sufficient basis for the learning of motor problems apart from any direct, first-hand contact and experience of the problem in question, i.e., the so-called "ideo-motor" theory, will need detailed treatment later. Also, here as elsewhere, the theories of the "Gestalt" school need discussion, and will be considered in a later section.

One word more; it is clear, of course, that the above reason-

ing and evidence apply to a complicated learning situation where, as shown, there are early elements of the whole situation which, as elements, have no immediate significance, no initial consummatory value. As we have shown, this has been one of the stumbling blocks in the formation of an adequate structural-functional theory of learning. But not all learning thus takes place backwards. For example, suppose that a cat in a maze whose assigned problem is to learn to run it through to a given exit, is rewarded by food at the first correct turn; then, having learned that turn, is rewarded when he takes the second correct turn, the first reward being then omitted, and this process of advancing the reward continued till the whole maze is learned. It is clear that each such step, in this instance, is learned in terms of a trace type of conditioning, and each successive step is then added on the same basis; in the former instance, each step is also learned on the basis of a trace conditioning, but additions are made backwards instead of forwards. Undoubtedly, in some instances of learning, it is better to learn in terms of logically successive steps, instead of what might be called "indirectly-backwards," but what instances of learning ought to be conducted the one way, and what the other, no one knows. This is emphatically a matter for further experimentation, particularly for concrete school studies, for certainly there is much of practical value and efficiency involved. It is to be suspected, of course, that some learning may take place in terms of a mixture of forward and backward addition of elements, and it may be that some apparently poor learners are so because of conflict or confusion in such mixed situations.

But enough has been already said here about this question of the learning process to adequately stress the fundamental point of view of the relation of structure and function. It will be remembered that the position has been consistently and insistently taken that for psychology to be, in fact, a science of behavior, it must be as rigidly experimental, as uprightly objective, as soundly non-speculative, as the other and more advanced physical sciences which have already established this as their program and justified it. It is only fair to say that we do not yet know in all details how learning does take place in terms of structures and their functioning; we can and do guess, we can and do verify some aspects of the problem, but we have not completely depicted the whole situation in terms of fundamentals. Much more experimental work remains to be done, particularly as regards modifications of the technique of the conditioned reflex, where, it seems certain, much greater complexity really exists than the

assumed simplicity which is usually made so much of. It cannot be too often insisted that an organism is an organism, that it never reacts to apparently isolated and simple stimuli, but always to a situation in which, for one reason or another, experimental or practical, aesthetic or religious, some one element stands out and has momentarily greater significance. But this should never be taken to mean that the organism responds to just that stimulus; it always responds to a situation. Furthermore, as regards response itself, the response is never simple, either. We do not know, for example, what else Pavlov's dog did in addition to salivating. He may and almost certainly did do many other things which the experiment does not record and of which we have, on the basis of present knowledge, no understanding. His heart may have accelerated, his tail may have wagged, he may have pricked his ears. S——R is a basic formula, but it is worthless and useless, even detrimental and destructive to our understanding of human nature, if we take the significance of any one of the three factors in it too narrowly, too rigidly and too exclusively.[5]

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Human Learning. One aspect of human learning that apparently differs from what we call animal learning is that which involves the use of language. We will postpone the detailed discussion of this aspect of human learning until the next chapter, examining here those types of human learning which do not or at least need not involve language though, as will be apparent, almost any if not all problems of learning may, in the case of human beings, use or at least display language. This, naturally, complicates the situation; indeed, one difficulty with defining many terms in the case of the behavior of human beings is that revolving about words and symbols. But some problems can be devised where language as a usual factor is, if not entirely eliminated, at least greatly decreased. Thus, a maze, cut out in the form of a pattern from sheet metal, constitutes for a human being a not dissimilar problem to that encountered when a rat runs a maze, as we have already seen, though here we are interested in the language side, which we did not examine previously. The human subject is blindfolded, lest he see the whole situation more or less at a glance, and is then required to learn to thread the maze by sliding a metal point along the metal runs of the

[5] As above, particularly Note (3). Also Koffka, Ch. IV. The material and experimental data leading to the formation of the new theory of learning roughly summarized above will be issued later.

apparatus. Here the subject acts much as does the animal; makes errors which are frequently repeated; runs up blind alleys, tries to make turns where none exist, passes turns used before, returns to the starting point, acts baffled, and finally solves the problem and establishes decent habits whereby the run may be made with few or no errors. Experiments have also been made with mazes sufficiently large for the human being to actually run them in exactly the same way as the rat, but no striking differences in the process of learning were observed from one type to the other.

It was found, in these experiments (partly on the basis of verbal and introspective reports), that the cutaneous and kinaesthetic sensations and perceptions were of the greatest use, though some subjects reported efforts to form an "image" of the design, and others endeavored to put into words a report of movements which were successful or failures. The rat probably cannot do any of this, but for all that the curves of learning graphically represent much the same results in the case of rats and men. Puzzle boxes, mechanical puzzles such as are so frequently found on the market as toys and playthings, constitute another type of human learning similar to the situations which the animals encounter when they have to "puzzle out" how to get in or out of a box and obtain food. But, as we have repeatedly seen, the human being can do what there is no reason to assume the lower animals can do; he can verbalize, talk about the problem, put into words what the difficulties are, plan in words a course of action, analyze the situation in terms of alternatives, and all that. To be sure this does not, in any sense, guarantee that the human being will succeed; indeed, one can talk about solving a problem all day and still fail to do so. Also, what is termed "insight," though probably not an exclusively human trait, enters into much human learning; that is, human beings will "see," or think they see, the "principles" (Gestalt) involved in the problem, but again it is only fair to remark that seeing dozens of principles does not guarantee the solution of the problem. Ruger, in his experiments along this line, came to the conclusions that, on the whole, what we call trial and error in animal learning also characterizes that of human beings. There was the same repetition of incorrect movements as was the case with the cat in the basket; the same frequent inability to "see" as with some of Köhler's apes. But it is also fair to say that human beings do, at times and in cases, show a proper insight, as do animals sometimes also, and that this apparently sudden grasp of the principles involved in a

given problem always results in a decided change in the slope of the curve. A slowly dropping curve shows trial with little sudden insight into principles; a suddenly dropping one a sudden real insight.

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Gestalt and Learning. These considerations of "insight," sudden understanding of the "principles" involved, or however otherwise one wishes to phrase it, lead naturally to our promised discussion of what the modern Gestalt school of psychologists have emphasized. It is not always quite clear what is meant by Gestalt, except in so far as it means a pattern. If it means a pattern of response, and if it means that past learning and experience enter into the solving of a problem quite as much as the direct first-hand experience of the problem at the moment, there is no question that this is so. But there appears to be, at times and in places, and in the writings of some of the exponents of Gestalt, if not the direct claim that some principle or power or faculty of insight is working, then certainly something that needs, on their part, much clearer exposition. Thorndike has already shown that there are often what he calls "plateaus" in the graph of a recorded learning process, i.e., times and places where, to all intents and purposes, as shown by the lack of rise of the curve, there is little or no learning taking place, often followed by sudden rises and gains of power and capacity. Thus, in learning, say, to speak a foreign language, when one has learned rules of grammar and the vocabularies of everyday speech, and when one has even learned to more or less laboriously translate from the foreign language to one's own, there is still apparently little or no progress in understanding the spoken language or in speaking the language. One just seems to stick at a given level. Yet, often with astonishing suddenness, there comes a time when, for no apparent reason, one finds oneself able to do that which, even the day before, one could hardly do. Is this really what it seems, a sudden acquisition of a new power or ability? Not at all; it is the result of gradual perfection of abilities, of gradual complicating of patterns, of gradual increase of facility of connections, of gradual eliminating of errors. The ability only seems sudden; the moment of functioning was simply the moment of completion of a long process of forming "hierarchies" of habits, each of which had first itself to be perfected. To make an analogy; if we place a pound weight on one scale-pan, and then add, grain by grain, a pile of sand, the balance will not trip till the last grain is added, but this last grain would

not have tripped the scale had not all the other grains also been there first.

So with this sudden "insight" shown in various situations and with reference to various types of problems; the insight or ability is sudden only in the sense that it shows itself at a given moment and was not there previously, but none the less its appearance has been preceded by a long, detailed and complicated process of forming connections, recalling and incorporating past significant and germane elements of experience till the result rose above the threshold of usability and functioned as an adequate but still usually further perfectable habit of performance. That we are not always aware of this process of forming the proper patterns is no criticism of the discussion; sometimes, on the other hand, we are. That we cannot, even after success, point out the elements that contributed to the final pattern, is again no drawback; sometimes, again, we can. Retrospection and introspection can sometimes furnish us with much evidence, worthy of credence, if and when supported by other material and considerations.

The Gestalt school has criticised what is specifically called the "trial-and-error" theory of learning, and in so far as their criticisms mean that there is also this process of building patterns on the basis of direct and also of past experience, they are sound. But if such criticisms mean that there is some other process than this one of forming patterns, that solutions spring out of nothing, are freely evolved contrary to the principle of determinism, just suddenly and for no sufficient reason formulated, then they are certainly incorrect. Trial and error, as a theory, has many levels of application. We can solve which key will open a lock out of several possible keys of which we know one is the right one, by mere trial and error. If we complicate it by calling in such past experience as, say, only a key of a certain type will fit the lock which is of a given make, we still use trial and error in trying all the keys of the right make, though we have also used past experience in the situation, in that we have eliminated efforts that would have been useless. If Gestalt means that past experience, always and everywhere, functions in present experience, in so far as there is any such past experience applicable, then it simply stresses what modern behaviorism also stresses. If it stresses the synthetic aspect of experience and the tendency of human experience to form into larger and larger patterns, then it stresses what we have consistently and insistently stressed here. If, however, it means to bring in new powers or abilities, without indicating their struc-

tural aspects, then it departs from an adequate science of human nature.

However, it is conceivable that what we call insight might not be accompanied by sudden modifications of the graph of learning, for the insight might be merely in terms of words, and the time for the necessary translation of this insight into motor habits be so long and so gradual that there would be no sudden change. Thus, in mastering, say, some technical tricks in cards, there can readily be real insight into the principles of proper manipulation long before the fingers and hands are adequately trained to carry out the principles involved. Here again is the significance, pointed out above several times, of the Gestalt school of psychologists, represented perhaps most clearly by the writings of Koffka. Koffka claims that what we speak of as insight in humans is also possessed by animals provided we arrange a situation for the animal that in comparison with his nature and past experience, is on a par with that in which humans can show insight. We can have insight, so to speak, only where there is hindsight. What is totally out of focus with all our past experience we must handle in terms of mere trial and error; what our past experience has made us somewhat familiar with, wholly or in parts, we can handle partially in terms of that past experience, in terms of the habits, patterns, configurations and circuits that are already there. In a word, in such situations, part of the learning has already been done, and we need merely come to the realization that it can be and must be used. Learning involves hindsight as well as foresight. This is again another way of saying that we never react to a mere single, simple stimulus, but always to a complex situation, even though the complexity may be in the past. We see, say, a given stimulus not as a group of lines, but as a square, a triangle or a parallelogram because of patterns of past experience. It is a stimulus in one sense, in the sense, namely, that it touches off past experience, but it is not a stimulus in the atomistic sense that it is merely a receptorial disturbance. If so, we would not recognize it, for recognition is just the factor, embracing past experience, which constitutes or makes possible what we have called insight. But several of these matters will again concern us when we treat of intelligence, its nature, and the theories concerning its origin and functioning.[6]

[6] As above; see, also Colvin, Gates, and Thorndike for practical applications to teaching and human learning. See Koffka, *Growth*, and his additional treatment in Murchison, Ch. 6, as well as Köhler, in Chs. 7 and 8, same reference, and his *Mentality*. See also experiments and observations of Yerkes, and Semon, both references for theories of patterns.

[8]

Consciousness and Learning. When we first considered, in the earlier chapters, the varying definitions and schools of psychology, one opposition that we stressed was that existing between the introspective school and the behavioristic, taking each in its most radical and pronounced aspect. And we there indicated that to deny or to affirm any too definite theory of the nature or the functioning of what is, with often considerable divergence of intention, called consciousness, would be to be speculative and non-scientific. And we also there indicated that in so far as psychology was or aimed to be the science of human behavior, it must necessarily take account of all types of human behavior, all types of experience. And, certainly, in studying such problems as the above, in which human beings report their ideas and their conscious experiences, we cannot, arbitrarily and dogmatically, decide to ignore, depreciate or otherwise speculatively assume the uselessness of such material. We had better frankly acknowledge a problem which we cannot at present solve, or else attempt to solve it and do the best we can. Verbal behavior is still verbal behavior; words can and do serve as stimuli as well as responses; words can initiate behavior as well as be an end product.

Experimentally, perhaps unfortunately, we cannot turn consciousness off and on; we cannot be sure that a given act of learning takes place absolutely without conscious direction or effort, whatever these things mean or are, and we cannot be sure that the reports the subjects give that they were conscious of this and that principle are true or that such consciousness made any difference. Again we come up to what can only be solved with frank speculation or left for further experimentation, greater knowledge, more facts. But assuredly we cannot blithely and blindly ignore or dogmatically rule it all out. It cannot be too often repeated that to assume consciousness is of no significance is as bad as to assume it is of paramount importance, even ignoring the additional fact that definitions of the word do not agree and no one is satisfactory or well founded. To be sure, what we vaguely call conscious effort to solve a problem may, as we have already indicated, only muddle things more, even where well established habits exist; in playing billiards, a definite consciously phrased intention to make a difficult or even a simple shot may result in absolute failure. There are certainly other factors, whatever the conscious ones are, and however they work. But to get a simplified and systematic and well-rounded theory of human behavior at the expense of trimming away difficult and unsolved problems will never give an

adequate science of human behavior, but simply another system of philosophy more or less adequate where it fits and useless where it does not.

Probably the best attack on the whole problem is through an investigation of the nature of language and the part words may play in any given behavior circuit, as stimuli, as responses, partial or solo, and this we will consider in the next chapter. Certain experiments along this line indicate, so far as they go, that what we call, roughly, conscious deliberation, verbalizations of situations, the use of words to represent facts, often though by no means always result in reducing errors, lessening the numbers of trials required, and thus bring about more economical learning. If one begins to speculate in terms of evolutionary values, a hazardous procedure since we are apt to beg the question, consciousness then appears to have a value simply because it is there, and to have appeared as a type of behavior evolved in the interests of survival and adjustment. But our problem is not so much to account for the origin as for the nature and function of consciousness, once we have adequately defined it.

In short, to put the matter in the lowest terms, we must again plead ignorance. Consciousness, whatever it is, or whatever it denotes as regards underlying behavior, sometimes apparently helps learning, sometimes hinders it. Naturally, one must not make the amateur error of assuming that the ideas in consciousness do the work; the above phrase "underlying it" should make clear what is at issue. Consciousness itself is not necessarily an agent, but may be a reflection or a sign of a state of affairs which is different from the state of affairs which exists when consciousness is absent. Notoriously, consciousness is present in problematic situations and disappears, or at least tends to disappear, when the situation can be handled in terms of well-established habits and conditionings, only to reappear again, in the situation in question, when some new elements complicate it. But to this question of consciousness as well as that of language, to which, as is clearly and repeatedly apparent, it is closely related, we will return in the next chapter in connection with problems raised there, and again consider, in new connections, the functions of verbalization in general learning of motor or emotional types.[7]

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[7] See references to Note (2), Ch. II, below.

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CHAPTER II

LANGUAGE AND INTELLIGENCE

1. Mental versus Non-Mental Behavior. 2. Consciousness and the Mental. 3. Theories of the Nature of Consciousness. 4. The Nature and Acquisition of Language. 5. The Type of Behavior Called Mental. 6. The Nature of Intelligence. 7. The Organization of Intelligence. 8. Language and Learning. 9. Language, Introspection and Images. Bibliography.

[1]

Mental and Non-Mental Behavior. We have seen repeatedly that to distinguish between mental and non-mental behavior is only possible provided we draw more or less arbitrary lines of demarkation. In other words, no rigid lines, apart from a more or less conventional attitude, really exist. We have also repeatedly stressed the fact that all lines of demarkation, based on analysis of human behavior, are more or less forced in the interests of research, description and exposition, and have also stressed the proposition that responses are responses of an organism rather than responses of some one part or some one isolated and unrelated organ or structure. But, in the interest of ordinary needs, as well as in those of educational applied techniques, we must show relative emphasis.

Certainly there is no "mind" distinct from and apart from a "body"; the use of abstract nouns does more violence to the facts than the use of adjectives which merely stress emphases and contrasts. But just as certainly, we can arrange a series of acts, or response situations, from one which most of us would call emphatically physical to one which most would as emphatically agree is mental. Thus, we would all agree that digestion is physical, non-mental, bodily activity, while we would also agree that worry about that same digestion is certainly mental. We would agree that the activity of the heart or lungs, the going-off of the reflexes, the regulating of the body temperature, the act of walking once it has been learned, are all physical, non-mental, and would also probably say that they are automatic. But we would admit that walking might again become a real mental act, a problem, and quite lose its usual automaticity. Going up the scale, we would all insist that translating a foreign language, solving difficult and perplexing calculus problems, finding out what's wrong with the car, making a public speech, writ-

ing a letter, reading a stiff book, listening to interesting music, are emphatically as mental as those above are physical. These mental acts of behavior have certain traits or characteristics in common; they have all been learned, none are native; they are conditionings, acquired through experience and learning; they are none of them, in any real sense, automatic acts, for when reading, solving problems, or any such acts become automatic, they cease to be typically mental. They are all problematic activities, i.e., they involve the doing of something not yet done; desired, but not certain of accomplishment. All of those definitely admitted to be mental, with the possible exception of the problem of the car and the listening to the music, would certainly involve language, and the two exceptions would as often involve language as not, though this may be left open for the time being. But all are, most emphatically, the functioning of some structure.

Another elusive term, one briefly discussed in the preceding chapter, is often brought into this discussion; namely, consciousness. It is frequently held that acts involving consciousness, (and again we may add, "whatever that is") are mental; those without consciousness are non-mental. To be sure, and overlooking the fact that this statement of the problem usually leaves undefined, "since it is clear to everyone," what consciousness is, what we have above admitted to be mental behavior does have a halo, or coloring, an accompaniment of consciousness. But, to look back at the specifically non-mental activities, even such a species of behavior as the beating of the heart can have a coloring, a halo, an accompaniment of consciousness without therefore becoming specifically mental in its nature, unless, of course we thus define mental as that of which we are conscious, a not very satisfactory definition, inasmuch as it destroys real distinctions. To merely be conscious, or better, "aware," of the beating of the heart, as such, and with no additional worries, problems or concerns is merely to be aware or conscious of the beating; in order to really make the beating of the heart pre-eminently mental one would have to complicate the situation tremendously. In other words, we can be conscious of what we have agreed to call specifically non-mental behavior, but becoming thus aware of it does not make it any the more mental. One can sneeze, and know that one is sneezing, it is still physical; one can digest and be aware that one is doing it nicely and comfortably, but it is still physical, metabolic, automatic, non-mental. So, while many if not all mental acts are usually accompanied by consciousness, the presence of that consciousness or awareness is not the only condition which makes them mental, and they can

be non-mental or at least relatively so for all the fact that there is such awareness.[1]

[2]

Consciousness and the Mental. But it is time that we gave more than merely passing attention to this matter of consciousness, one of the shibboleths of modern psychology; a bone of contention, a great mystery, and perhaps, in the end, something of a boogy-boo of our own creating. Broad finds just seventeen different theories can be given to explain and describe the relation of body and mind; Ogden finds only seven of importance for psychology, and while the problem of body-mind is not the same, exactly, as that of the nature, the origin and the functioning of consciousness, they are, of course, extremely closely related and really cover, from slightly different points of view, the same ground. It is quite unnecessary for us, in this survey, to consider all, or even any one of them in great detail. It is merely necessary for us to sufficiently consider the problem so that we can define our terms decently, see what we know, realize what we do not know, understand the basis for the interest in the problem, and re-state it in terms of our fundamental methodological attitude. One great difficulty with this whole matter is that many of the definitions assume too much; that is, many of the terms are blurred, speculation is more frequent and more relied on than observation, and the whole investigation smacks more of philosophy in the traditional sense than of psychology in the scientific sense. And we must again insist that what is important is not so much the right solution or, for the present, the complete understanding of all that is involved, so much as the avoidance of the wrong speculative solution, the assuming of too much knowledge, the twisting and distorting of other ideas and concepts through the reliance on a basic assumption that is inadequately supported by evidence, or the complete ignoring of problems as "too difficult." We can and do learn about human nature, and we do have a scientific psychology, so far as it goes, even though we do not "solve," completely and finally, the problem of the "body-mind" relationship or, to give it the other phrasing, the nature, the origin and the functioning of consciousness. Science grows, historically and actually, from simple to complex; inductively, and not from generalities to specific findings. The problem, as a problem, is an important one, but what is

[1] Allport, Chs. VIII and IX; Carr, Ch. XVI; Woodworth, *Dynamic*, Chs. III and IV, *Psychology*, Ch. V; See also Notes (2), (3), and (4), particularly Ogden and Weiss.

most necessary is not so much an immediate and catagorical answer as an approach, a technique of investigation and, for the present moment, an attitude which, while not a final solution, will be an adequate working attitude, allowing for the attainment of further knowledge and not distorting investigation.

It will be remembered that this problem of the nature and value and functioning of consciousness arose also in connection with the problem of learning, though there it was merely mentioned and no effort made to supply even a tentative solution or attitude. And there, too, the question of language as either an accompaniment or a sign of consciousness was raised, just as it was above, in connection with our initial considerations concerning the distinction between mental and non-mental behavior. We concluded, there, that verbal stimuli, as portions of a situation or response, may be important parts of either and that, on the whole, verbalization on the one hand and awareness, consciousness, or the realization of a "problem" on the other hand were, if not exactly synonomous phrases and words, at least closely related to one another and really referred to much the same aspect of human behavior. But we also know that learning can take place without language; in fact, learning through, by or with words and symbols is merely one type of learning. But we had best first attempt to distinguish more clearly between some of the highly controversial terms we have been so freely using in this matter.

By "body" we mean the actual organism, the co-ordinated muscles, bones, sense organs, viscera, torso, limbs and head, nervous system and all that is tangible, sensible, material. By "mind," on the contrary, while we most decidedly do not mean something "spiritual," or non-bodyish as opposed to the body, we do not mean something as easily and as concretely demonstrable as the body. The difference of body and mind is not one of opposition, but of nature, origin and functioning. To speak positively instead of negatively, by "mind" we mean two things, depending on whether we are speaking structurally or functionally. Structurally speaking, by mind we mean the actual traces, the actual circuits, the actual modifications, connections and interconnections made through experience and conditioning in the nervous system as a whole. Functionally speaking, by mind we mean the activity of these neurons and neural patterns, plus, of course, associated receptors and effectors. This is to make much the same distinction we made above as between mental and non-mental behavior and is quite consistent with it, and again leaves us with a consideration of consciousness as a related but not identical

factor with mind, for, on the basis of the above, some of the acquired circuits may function, thus making for mental behavior, without consciousness, and some of the original circuits may function with accompanying consciousness, though behavior is still on a non-mental level.[2]

[3]

Theories of Consciousness. Most certainly, to again speak negatively, consciousness is in no demonstrable sense an energy, or a force; a cause, as such, of anything. Consciousness, if it is to be any of these things, will bring us to contradict our original statement that whatever does anything is itself something, i.e., all functioning has a structural basis. Activity is the activity of a structure. We cannot, if we wish to be scientific in attitude and procedure and to have a scientific psychology, allow for the intrusion of such uncalculated and, by definition, incalculable entities. There is no question that one difficulty with the whole subject has been an unfortunate choice of words, based, of course, on other and associated speculative problems. It is far better, clearer, truer to the facts to say that we "are" conscious (or even are consciousness), than to say we "have" it. When Herrick calls consciousness a "mode of behavior of matter in motion," he is far better orientated psychologically than many a professional psychologist of the speculative and non-scientific persuasion. Consciousness characterizes nerves as vibration characterizes other forms of matter. Protoplasm has, when in the neural system, as one of its traits, qualities, functions (call it what you will), what we term consciousness. Consciousness, as we ordinarily use the term, has too much abstractness about it; when we say conductivity is a trait of nerves, we understand that nerves conduct, and do not conceive of "conductivity" as a thing or power independently existing; we should take the term consciousness in just such a sense and say that nerves do what is involved in consciousness, though we lack the word to express it in this way. To be sure we also uncritically say that "we" are conscious, that the "self" is conscious, again making the problem more complex by bringing in still other dubious and unanalyzed matters.

From this point of view, namely, that consciousness is a mode of functioning of the nervous system, that it is a mode of behavior of matter in motion, a peculiar and highly complex matter and

[2] Ogden, Ch. II; Rignano, Ch. XVI; Warren, Chs. I, II, VIII, and Problems I and II in Appendix; Weiss, Chs. XI and XII; Pieron, Part I, Chs. I and II, and Part IV, Conclusion; Herrick, particularly Ch. XVI. Also, throughout, Hollingworth, Brood, Holt, Ogden and Richards, Sidis.

a peculiar and highly complex motion, we can better approach our original problem, the relation of consciousness and the so-called mental type of behavior. Certainly, from all the above, we cannot and will not think of consciousness as some force directing the specifically mental, a force lacking in the case of non-mental behavior. Nor, if we treat consciousness thus, can we think of it as being a causal agent, nor yet as a purely elusive epiphenomenon. Either so-called parallelism or interactionism is thus ruled out. Parallelism, an historic and widely accepted solution of the problem, thinks of two series of events, the neural and the conscious, neither affecting the other or having any relationship to the other than that of temporal agreement. Two clocks, as it were, each ticking away on its own, but striking each bell, and each tick, just on the dot, but having no other relationship. Interactionism, likewise, does violence to what observation and present knowledge would indicate as the fact; consciousness, as such, does not and cannot move matter; matter, as such, does not "create" a thing called consciousness. Thoughts, as such, do not move muscles; neurons do not create "thoughts." To say that consciousness is a function of neural structure and activity is not to say that consciousness, as a separate thing, is created by neural action; and a mode of behavior cannot itself initiate behavior.

The newer theory, and it must be remembered all this is still theory, is that language difficulties are at the basis of the whole thing. We have no similar situation which, by analogy, can make clear to us what, through age-old ways of thinking, has become muddled. Language has separated, and language finds it hard to re-unite. But what is called the "double language hypothesis" is, after some little effort to divorce one's memories of older and more traditional explanations, truer to the facts, such as we know them, better suited to the needs of psychology does no violence to neurology or psychology, and makes possible the retaining of the objective and scientific attitude embodied in the formula S——R, and shows, furthermore, how the quarrel between introspection and behaviorism can be settled without violent and dogmatic assumptions on either side. The double-language theory frankly acknowledges that many "events" can be seen in two ways; first by the individual, from within, in whose conduct the event is an event and, secondly, by the outsider who is observing the individual. Thus behavior can be known introspectively, (i.e., consciously), by the individual whose event it is, in whose organism the acting is taking place, and objectively, by the observer whose organism

does not share directly in the same activity, but only indirectly through that observation which makes it part of his field of attention and interest. This theory, sometimes called the "double-aspect" (Warren), sometimes the "double-language" (Mitchell, Pieron, Ogden), though the two really differ in details, might be stated somewhat differently, thus: conscious and neural events really constitute one, not two series of events; where interactionism or parallelism divides them into two, (either co-operating, or merely chronologically attuned series) the double-language hypothesis makes them one. Putting this still differently, neural events (in some instances, that is), when they are mine, are conscious; when they are yours, I observe them as reflected in your overt activity. Consciousness, when and if it occurs, is a property of neural substance, a characteristic form of neural behavior, but shows itself, as such, only to that organism in which the circuits concerned are actually functioning.

Let us try to make this elusive and highly theoretical distinction clear in more concrete terms remembering, however, that we are interested not so much in a final solution, as in such a re-phrasing of the problem as will fit in with what we have, in other connection, found to be a necessary basis for a scientific psychology, a phrasing which will enable us to proceed further in a direction which will then probably yield us more and better knowledge. Suppose, then, that a neural circuit, in the association areas, say, with its proper receptors and effectors is roused to action by the proper situation. The circuit functions, resulting in overt activity which can be observed by anyone in the field of the situation. That overt response is the outward and observable sign of an inward and conscious functioning. The individual experiences the activity of the circuits as consciousness (if it is a circuit involving this possibility), the external observer observes it as overt behavior—omitting any considerations of the observer's consciousness as not germane to the present problem. From this point of view, consciousness does not "cause" anything, since it is the actual (partial) functioning of a circuit; on the other hand, the neural activity which "is conscious" or consciousness to the "owner" is a part of the total circuit which is involved in the final effectorial (behavior) observed act. Both consciousness to the owner and his overt behavior are alike the results of stimuli. This, while still needing much more thought, much more research, is none the less worthy of consideration as a decent and at least temporarily acceptable basis for further research, and it fits in with the S——R formula in the better and larger sense. It shows the place

and nature of introspection, accounts for its difficulties and deficiencies, yet shows, too, how some introspective material may be valuable, admissible, and usable. It shows, too, the relationship of consciousness to verbal matters, and to acquired, as opposed to native circuits and activities, and shows, finally, how any act may become conscious by becoming a part of such a circuit as is, through its nature, one which gives rise to or is consciousness.

When we say that this attitude toward the problem of consciousness enables us still to work in terms of the S——R formula (always remembering neither the S nor the R is to be taken too narrowly), it means that this attitude toward the nature and functioning of consciousness leaves no unconsidered, freely floating ends; all human behavior thus becomes unified, the conscious as well as other aspects. It means, furthermore, that consciousness is neither ignored nor yet appealed to, mystically, to explain what cannot apparently be explained on any other basis. It means, finally, that consciousness ceases to be a *deus ex machina*, which will appear at the critical moment and render intelligible that which other explanations or efforts cannot make so. It neither dignifies consciousness out of its proper importance, nor yet sneers at it as without significance or worth. It leaves it where, as a matter of fact, it has always been; an aspect, a quality, a kind of human experience and, therefore, necessarily included in any survey of human behavior that aims to be scientific and applicable. Consciousness as a mode of behavior of matter in motion, consciousness as a typical form of activity of some neural circuits, ceases to be a metaphysical boogy-boo and becomes a fit subject for the scientific psychologist. What happens to me, "as me," i.e., as an integrated organism, is a matter of consciousness; what happens to others is, as such, an observed occurrence in the external world, though my own consciousness of it may again be a happening merely and characteristically mine, while my overt actions in response to it may again be observed consciously by some one else. For the time being we will leave this matter, returning to it again in our consideration of the abnormal and the phenomena involving so-called dissociation.[2]

[4]

Nature and Acquisition of Language. In considering the subject of language in general, we must not think that it is identical with speech in the conventional sense. To speak is merely to use one form of language, and speech itself has many forms. The face has a language, as have the hands, and even the body can

speak in its own ways. By language, then, we mean any and every type, variety, system or random collections of symbols, i.e., acts or stimuli which stands for something else. This "standing for" something else is the essential trait of language; it is representative, a substitute, a sign, a symbol. The finger movements of the deaf and dumb are as truly language as the King's English spoken aloud; music, too, may be a language, and so may gestures, often specifically called "sign language." Nor must we forget that language, in this wide and all-inclusive sense, has its sensory as well as its motor phases; we are sensitive to language stimuli, and we give language responses. Language may reach us through the eye, as in reading or watching the signs of another; through the ear, as in hearing; through touch, as with the script of the blind, and also as in touch typewriting, through the receptors of the kinaesthetic system. Nor is there any reason why taste or smell might not become the basis of a language though, as a matter of fact, they have not, perhaps because of technical aesthetic or other difficulties. On the effector, motor side, we find language expressed through the muscles of the speech apparatus, through the muscles of fingers and arms, with other subordinate and related bodily activities, resulting in what we call words proper, signs, drawings, pictures, and a host of related though characteristic forms. Incidently, it may be noted here, that what we call art is also called a language, responses to which are, characteristically, emotional rather than motor; but to this we will return in a later part of the book.

Language, then, is a form of stimulus or response; it is, in many cases, overt, but may, as we shall consider, be what is called "implicit," i.e., not perceptible to the average observer, without the aid of apparatus. Language is learned behavior, a form or type or species of conditioning. Thus, to give an example of learning involving language, and involving, also, the same sort of conditioning which we found when applying the theory of the conditioned response to the rat learning the maze, suppose that we endeavor to teach a child a word that "stands for" an object or an act. That is, every time that a child sees, touches and otherwise comes into contact with a doll, we say the word "doll." Every time he picks it out of a number of toys within his reach, we say "doll." By and by, and allowing for the oversimplification of this example, he will, when we say "doll" and the object is within reach, take it up and handle it, or reach for it. He has learned to connect, or perhaps we might better say, he has made a connection between an auditory

stimulus and certain perceptions and motor acts. To say he "understands" the word "doll" adds nothing to the subject, since understanding, by definition, in terms of treatment of the subject, will mean simply that proper or approximately proper responses are made to the stimulus. To "understand" language is to do what it "means," and the "meaning" of language is to do what, through previous experience and training and conditioning, has been associated with the stimulus. Words have no mystic, innate significance; they are arbitrary symbols, substitutes, signs; the word "dog," which all of us understand in a fairly definite sense could, had we been so trained, so conditioned, "mean" for us what we now understand by "horse" or "cat." Any language stimulus can stand for any act or any experience; it depends on how the conditionings have been formed. The writer, as a child, once believed that so-called "foreign" languages were merely ways of using differently the words belonging to his own language. Thus, "cat" meant "cat" in English, but might mean something else in other languages; a perfectly sound theory, incidentally, consistent with what we know of language but, of course, contrary to fact, as indeed many theories, alas, are. Language, in a sense, is arbitrary; there is no compulsion for a given object to have a given word stand for it.

Language is thus a system of substitute responses; we may and do react to words where, if we did not have them, or did not, as communicants, have the same language, be reduced again, as the philosophers in the Floating Island of Gulliver, to carrying about such actual concrete objects as we might care to mutually consider. An individual who "speaks" several languages, is one who has several more or less mutually exclusive sets of substitute stimuli and responses. And, it is noteworthy, that some individuals become more skilled in interpreting such substitute stimuli than in making the correct response in the same system; i.e., they understand, but cannot use or speak in terms of the set. From one point of view the stimulus side is important; from another, the effector side. To sum up the matter, and keeping it on the basis of the conditioned response, we can see at least three stages in the acquisition of articulate language, i.e., speech proper; first, the conditioning of random vocalizations or movements, resulting in a final learned and definite response; second, a higher stage, the effect of the speech, of others on us, as a model, not to imitate, but as a stimulus basis for learning what to say; finally, the influence of the physical environment and objects and situations in general. The random

articulation and vocalization of the child soon bring it to the position where many sounds are possible; a circular response, whereby the child hears what he is himself saying, brings it about that the same auditory stimulus from others can lead to the vocalization of the sound in question. If a baby, on the basis of random vocalization, comes to say "bah," he can then, since he has heard himself while performing the response, come to say this same "word" when his ears are stimulated by the pronouncing of the same sound by some one else.

More complex sounds, uttered by others in his circle, which he has not yet himself produced, result in the child's doing the best he can; the process of learning and ever closer approximation then continues; he does not, as we have already noted, directly imitate, but learns on the basis of a given stimulus, constantly approaching nearer and nearer within the limits of his abilities. The language he thus hears serves as the basis of his learning and conditioning, and is neither the outflowing of innate material nor the result of parrot-like imitation; it is a long continued learning process, continuous and ever more detailed conditioning. Finally, the simultaneous presentation of objects and sounds results in the acquiring of specific "names" for the objects of the environment, abstractions coming last of all.[3]

[5]

Thinking Behavior. Returning to our discussion of the mental as distinct from the non-mental, it is now apparent that, in language, as was previously hinted, we have a basis of contrast and separation of the one from the other; a basis, that is, as we have also stated, more or less arbitrary, pragmatic and technological. Roughly speaking, all mental behavior involves the use of language of one sort or another; though there are some mental acts which, in the more usual sense of the term, do not involve language; the substitutes or symbols used must conform to some social set of symbols or signs to be language in any significant sense, though, from the definition, even that which I personally, and to the exclusion of all other people, use as language, in so far as it is a set of signs or symbols, is properly to be called language. Thus the usual act of negation is either the pronouncing of "No" or the shaking of the head. If, for whatever reasons, I "mean" by a circular motion of the hands what is usually meant by the shaking of the head, it is my own language, but not language socially speaking. But

[3] Allport, Chs. VIII and IX; Weiss, Ch. XII; Koffka, Ch. V; Pieron, Part I, Ch. II; See, also, Hollingworth, Ogden and Richards, Vaihinger, Rignano, Dewey, and Note (4) in general.

this is, perhaps, a minor point; the major issue being that when an act has an ulterior, a secondary, a demonstrative meaning, stands for something, it is language, and it is mental as distinguished from non-mental behavior.

But to come back to "thinking," and to consider all the words, symbols, language formations, which roughly have much the same significance; thus, we muse over the day's events, we ponder the problem of politics, we reflect on the state of the world, we judge the value of an education, we estimate how rich Jones is, we imagine how it would seem to live in Florida, we think Boston is noisy, we believe the clock is slow, we hope the train will be on time, we consider the alternatives, we reason out a problem, and so on, for still more variations of language that all, for all their differences, point to much the same thing. If we wish to arrange them in a series, and allowing for overlappings and mergings, we can see one group that is mere statement of fact or opinion; another that involves the consideration of past events or distant occurrences, or imaginary combinations of events; a third, which involves a little more complexity, the putting of "2 and 2 together" and the coming to a new conclusion we had not phrased previously; and finally, a still more profound species, in which many contributing facts, opinions, situations, possibilities and probabilities are sorted out, put into order, and something quite new evolved. This is what is usually called "problematic thinking." But it is to be noted that all involve language, substitute symbols, substitute stimuli and responses. It is all at second hand, through the medium of language, but it must also be emphatically noted that more than language is involved. The other aspects will be considered, later, in our treatment of the psychology of belief. Here, it should be again noted, that human behavior is never, with rare exceptions, simple; it is always the response of an integrated personality, a complexly conditioned organism, a mature or at least maturing individual, to an equally complex situation in which, to be sure, some momentarily important or leading element may be the aspect of the total situation to which we most strongly tend to respond but still always in terms also of the other modifying elements.

But, allowing for these considerations, it will none the less pay us to consider, as an example in thinking, the matter of buying one of two possible gifts for a friend. The situation is problematic in several respects: which will most please the friend? which will be best for him? which will be most fitting as a token of friendship? which will last best? which, taking into account the

matter of price, can best be afforded? and so on. Now, there are, theoretically, two distinctly different, radically opposed methods of solution; one so bizarre that we seldom if ever use it; indeed, it is only sometimes that circumstances permit its being used. That is (and forgetting the improbability or even impossibility for a moment), we could buy the friend the one gift, see how he reacted, what happened, then take it back, try the other and, finally, on the perceptual basis of this trial observation, plus perhaps the introspective reports of the friend's conscious experiences with reference to each gift, finally decide which one should be the permanent one. In some cases, as where, say, two different makes of typewriters were involved, we might actually let him try out each kind, but often, as we have said, this procedure is impossible and fantastic. What, then, do we actually do?

We think; we use language; we solve the problem, for good or for bad, through the use of language. We represent to ourselves and to sympathetic listeners, the good points and the bad points involved in each purchase and each gift; we measure up the circumstances of each gift to the personality of the friend as we see him. Giving him a car may make him waste too much time and spend too much money; giving him a trip to Florida may result in his never coming back; giving him a thousand dollars may hurt his feelings; giving him some stock might mean he would lose it. That is, where we cannot manipulate, in terms of motor reactions, where we cannot observe in terms of percepts, we use the substitute stimuli and the substitute responses of words, of language. We solve the problem, at second hand, apart from contact with the actual things, in terms of counters which stand for them, or so we fondly believe. What we cannot solve in terms of direct manipulation, we solve in terms of indirect, representative manipulation. What we cannot observe at first hand, we observe through the second-hand representative aspect of words which some one else gives us as his verbal reaction to the situation in question. Language shuts us out from a whole world of experience, even while it brings us into it; language is at once a disability and an asset.

It must be carefully noted that language guarantees us nothing as to fact; we may spend a month in a verbal consideration of some situation which, were we able to approach it at first hand, might be solved in a moment, and even after the month's laborious effort, the final verbal solution may be so far wide of the mark, so inadequate, so ludicrous, so unfitted to the facts, that it is worse than useless. There is never really any trouble

in getting people to think; the trouble is to get them to think accurately, i.e., so that the results of their verbal, linguistic considerations will have some reference, some relationship, to fact and reality. In other words, we all have the substitute-stimuli-and-response sets which we call language, but whether the conditioning has been worth while, or whether we have a set of substitutes that are worth little, only trying will tell. To think, and to think accurately, are very different matters, though both use much the same technique. Thinking, then, is a form of behavior which uses words, substitutes, for the concrete situations which, in the case of the rat, say, confronted the subject concretely, at first hand. The rat did not think in terms of verbal counters, he was in first-hand contact with the materials and situations of his problem; he solved it in terms of immediate motor reactions. A man in the same situation could, as we pointed out, use language as an aid, though it might not always give the expected help. From this point of view we might say thinking is that form of trial and error learning which proceeds in terms of substitutes, of language, and is therefore, by definition, mental.

Not all such thinking is directly observable or audible to an outside observer. I may talk aloud, think right out in meeting, voice my conclusions for all the world to hear or to see; or I may mumble them to myself without even perceptible movement of the lips. Theoretically, it is assumed that all mental behavior, since by definition it is language behavior, must thus have its wordy, verbal-motor side, even though every effort to find the movements involved leads to failure. A response is a response and, as we have noted in an earlier chapter, the effectors comprise the striped, the unstriped muscles, the duct and the ductless glands. If none of these perform, there is no response at all; if muscles do not respond, there is no language or thinking behavior. To observe their operation, however, is another matter, and much interesting, valuable, but often inconclusive experimenting has been done along these lines. Not all speech even, let alone all language, is a performance of the specific vocal apparatus of the mouth and throat; one may talk as we have already pointed out, with the hands, the body, the shoulders, the fingers, with any and every effector which has been conditioned to thus deal in substitute responses. As theory, the attitude we have expressed is quite satisfactory; thinking is the functioning of substitute, linguistic responses, plus the circuits associated, though it is not always directly observable. The sub-vocal, implicit talking (Watson) or functioning of sub-

stitute responses which goes on when one is immersed in deep reflection is, at present, not demonstrable; but indirectly, we can again insist that a response is a response of an effector, and the only effectors we know are muscles and glands. Thought or thinking as the mere and unshared activity of neurons, without effectors, is inadmissible on the biological and structural basis, if on no other. Thinking is behavior, and behavior involves effectors. No effectors,—no conduct of any kind, is as true as the earlier statement, no receptors—no basis for learning.[4]

[6]

Nature of Intelligence. When we discussed the Body-Mind problem, we pointed out that abstract terms frequently make an issue even more confusing, however difficult it actually may be in fact. If we use the adjective "intelligent," we can more readily contrast behavior which deserves the qualification with that which does not. Our definition of intelligent behavior will be "that which results in successful adaptation," that which results in decent adjustment, that which puts an end to the problem in question without putting an end to the animal. Naturally, one can quibble over the above definition; we have frequently remarked that definitions often raise as many problems as they settle. But, to give concrete examples, we mean by intelligent behavior, such behavior as the rat shows when and if he gets his food at the end of the maze. And, other things being equal, we will say that a rat which gets it quicker than another, which sooner reduces its errors to zero or near zero, is the more intelligent. The ape that piled the two boxes upon one another to get food was intelligent; the one that did not, lacked intelligence to that extent and in that situation. Intelligence, as intelligence, as a faculty, as a something or other which is "possessed" by an animal is non-existent, mythical. Intelligent behavior is behavior that is so judged in terms of results in a given concrete situation; one does not possess so much intelligence that can be directed now here and now there. Intelligence, for all its abstractness as a part of speech, is emphatically concrete when put to work.

While it is perhaps better to thus define intelligent behavior, so that all behavior, mental or non-mental, which is adjustive, adaptive, is included, some definitions reserve the adjective intelligent to mental, i.e., linguistic, substitute behavior which is

[4] Weiss, Ch. XIV; Skinner, Gast and Skinner, Ch. XV; Robinson and Robinson, Ch. XVI. See, also, Hollingworth, Titchener, Thorndike, Dewey, and particularly, Watson, *Psychology,* Chs. IX and X and *Behaviorism,* Chs. X and XI.

adaptive, adjustive. On the whole, the broader definition seems more satisfactory, in that it allows a wider use and a more inclusive survey of behavior and does away with the need for another word to describe non-mental, non-verbal, non-language adaptive behavior. Other, related definitions say much the same thing; intelligence is purposive thinking, is problem solving through thinking; both definitions again stressing the success side of the behavior. It is, however, certainly not wise to be so rigid as to say that behavior which does not solve a problem is completely lacking in intelligence, and one most certainly cannot say that unsuccessful thinking is not thinking simply because it is unsuccessful. That is, these definitions again show emphasis, stress certain aspects of the situation and ignore others. It is even possible to be learnèd, and relatively unintelligent or non-intelligent. Still further, it is possible to be intelligent in some fields of behavior and non- or un-intelligent in others. But this statement needs much discussion and explanation and leads us directly into a consideration of the basis of intelligent behavior.[5]

[7]

Organization of Intelligence. While this phrase is frequently used in the literature, it has unfortunate implications. Two previously discussed matters must here be brought to mind; first, the structural aspect of all behavior,—no behavior without structure; all behavior is structure in functioning. Secondly, all behavior is behavior of the organism; the organism does not do piece-meal work; when it reacts, when it responds, it does so as organism, not as this or that organ, as this or that habit, as this or that power or faculty. Keeping this in mind, it will be clear that the above heading must be taken to mean to what degree does intelligent behavior in one direction imply the same intelligent or nearly the same intelligent behavior in other directions, or at least the possibility of it. If an animal exhibits intelligence here, will it also exhibit it there, in some quite different field, and if not why not? Is intelligence general or specific? In the present state of knowledge, this question, like some others we have discussed, is difficult if not impossible to answer.

One theory would have it that intelligent behavior in one situation implies that the animal could show equally intelligent behavior in any stiuation. This is the so-called uni-modal theory, and includes, also, a minor modification, that of Spearman, where

[5] Skinner, Gast and Skinner, Ch. V; Claremont, Thorndike, *Measurement*, Spearman, and as for Notes (3) and (4). See also, for experimental aspect, Titchener. See Dewey for psychological analysis of thinking.

a specific training factor is also assumed. This implies something in the nature of the actual structure of the animal, some peculiarity, some fineness, some greater sensitivity of receptors, connectors or effectors, or all of them. Contrasted with this is the so-called multi-modal theory, which assumes that there are several distinct types of intelligent conduct, each based on some specific structure; thus, it is assumed, theoretically, that there are such things as linguistic ability, mechanical ability, social ability, i.e., abilities which mean that the animals in question can act intelligently in one or more of these fields due to some specific structures. To be sure, the whole discussion, in nearly all the literature, uses the word "intelligence" rather than the phrase "intelligent behavior" and rarely directly refers to structure. The whole argument is here turned, as far as possible, into language consonant with the formula which is the short-hand for our point of view namely, S——R. Unless intelligence can be related to at least an assumed structural basis, there is no use talking about it. Furthermore, much of the literature, unfortunately, is in terms of the word "intelligence" in such a way that one would judge, unless informed otherwise from other writings, that the authors were talking about some mythical power or entity with that name, of which one might possess much or little, use it or not when having it, and so on. The whole discussion needs to be placed on a more substantial, behavioristic and objective plane. A final theory, sometimes called the non-modal theory, assumes that all acts of intelligence, i.e., all intelligent, adaptive behavior, is special, and based on special structures.

To rephrase all this, one might say that the multi- and non-modal theories appear to assume faculties, though they try to avoid language directly stating this, whereas the uni-modal theory does not, for it rather specifically states, at least in the instances of some writers on the subject, that what is assumed is not a faculty, but a structure. That is, intelligent conduct is conduct which results from the activity of a structure which is capable of receiving such modifications, such conditionings as will enable it to adapt better to problem situations for which, notoriously and by definition, no ready-made or habitual responses exist. Where we use habit that has been acquired, where we use reflexes that are native, we are not, strictly speaking, being intelligent, even though the behavior is satisfactorily adaptive; only where we form, on the basis of past experience and native structures, a new or newly organized response, are we properly speaking as regards a given situation, intelligent. Ap-

parently, some organisms are more capable of receiving, retaining and organizing traces or new circuits or modifying old ones; some do not or cannot do so. That this is theoretical we have acknowledged; it is, however, such theory as does not fly in the face of facts, does lend itself to further investigation, is in accord with the basis plan of making all conduct conform to S——R, where S and R are situations and responses and the bond between is a neural one. In the light of this, intelligence is, as we have said, a form of behavior, a form which is adaptive, which usually involves language, which deals with experience tentatively and in terms of substitutes. Naturally, more remains to be said on this subject, but until we have discussed aberrations and forms of intelligence and considered the so-called intelligence tests, it will be best to postpone further discussion.[6]

[8]

Language and Learning. In our several discussions of the nature of consciousness, of the meaning of the mental or of the significance of verbalizations, and in still other related topics, it became evident that there were several widespread and incorrect beliefs and theories concerning the value and significance of verbalization in the general process of adjustment and the solution of problems. It is now time to consider this matter on its own merits and see how, under what conditions and to what degree verbal activity can lead or help to the solution of non-verbal problematic situations, or to what degree, to state it otherwise, verbal conditionings or behavior can lead, directly or indirectly, to the use or formation of non-verbal conditionings and behavior. We have said, and correctly, that what we variously call thinking, verbalization or mental behavior, can and does affect overt motor and emotional adjustment but, while this is undoubtedly true, it leaves many problems unsolved and even unsuspected and is apt to seem to mean that, to solve a problem, all one needs to do is to think enough about it, use enough words,—verbalize sufficiently. Whereas, this is most certainly not so.

In the first place, there are many things we can "do" in words that we cannot do actually, overtly, in terms of motor or emotional performance and behavior. Thus, in words, we can drive a car, repeating all the elements and facts of a correct motor-emotional performance, avoid other vehicles, slow up at

[6] As for Note (5), particularly, Spearman and Thorndike. See also McDowall, particularly the first six essays, for treatment supplementary to present point of view. See also Hollingworth, particularly Chs. I, V and XII to XVI, and Platt and Titchener in general.

proper places, run the car efficiently, back up, go slow or fast, and all that even though we cannot actually do what we have talked about. This is to say that we can speak a set of words, which words, whether verbs, nouns, modifiers, connectives or what not, bear to ourselves and others a certain meaning, i.e., stand for the acts, the performances, the behavior which would be exhibited were we to actually thus run a car. It is, as we have said, indulging in substitute responses, speaking instead of doing more overtly, using the specific muscles of the throat and associated speech apparatus instead of those concerned in the deed proper. And we can, as the example illustrates, thus "do" what we cannot otherwise do. Again, in words we can swim, even though we cannot in the water; in words we can control a bad temper, give a good performance on a tight-rope, beat an enemy to submission, accomplish heroic tasks, realize all our ambitions. Nor is this just day-dreaming or fantasy, though it may be that also; as we shall see, this whole subject of the ability of a human being to solve, in words, what he cannot even sometimes attempt to solve in fact and in terms of first-hand objective experience is the very foundation of many of the systems and types of adjustment which we will be greatly concerned with in Part III and, particularly, Part IV. Philosophy, which purports to solve the riddles of the universe, is, at bottom and by tradition, largely a matter of words, except in so far as philosophy, in a more modern and more scientific sense of the term, begins to work with a new technique, a technique akin to that of the sciences. But this, as we have said, is a matter treated in detail in the later sections of this book and need here be only mentioned in anticipation of that discussion. Also, of course, much of the thinking of the abnormal personality, also a topic of Part III, comes under this general attitude toward verbalization and Ch. IV of this present section of the book should also be consulted. As a matter of fact our possible verbal responses always exceed, in number and in complexity, other types of response, except in early life before language habits are well established.

Here, our main concern is an examination of verbalizations as species of conditionings, as parts and aspects of larger patterns of conditioned responses, and to see to what degree the verbal portion of such a general pattern can affect other portions that are not verbal, and to what extent verbalization can form the basis for forming new or larger adequate patterns that will be more than merely verbal. Consider, for example, the verbalization, "In order to avoid dangerous skidding, the brakes must

be applied gradually, the clutch left in, and the front wheels turned in the direction the car begins to skid, if and when it does." This is, let us suppose, an adequate verbal phrasing or substitute language response to the situation or question of skidding. But further suppose that an individual, able to make such a verbal response and others related to it, actually finds his car skidding. Does the ability to make the proper verbal response mean, also and therefore, that he will make the proper motor one? Decidedly not. Furthermore, suppose an individual also adds, as further verbalization, "One must remain calm, not become frightened or excited or begin to think of horrible consequences." Does this mean that an individual able thus to verbally express good emotional control will actually exhibit that control when and if skidding? Again, decidedly not. It is also true, of course, that an individual unable either to express verbally the proper technique of the physical control of the car, or to verbally state the proper emotional control could, none the less, exhibit both excellently. In short, there is no necessary relationship between verbalizations and other forms of behavior; though both refer to the same situation, they may be quite without other relationship to each other.

But, as is clear enough empirically, some individuals can both talk and also overtly perform a given act. That is, they have, with reference to a given situation, several sets of conditionings: verbal, motor and usually also visceral. If they have these several sets of conditionings, they can then react in terms of any one set though, since they are, as stated, sets with reference to one and the same situation, they also form a total pattern of response to such a situation, and each partial aspect of the total response pattern can set off the other portions. Thus, talking about something for which an adequate motor set of responses also exists, notoriously tends to set off shortened and abbreviated motor behavior and also, perhaps, to at least start emotional patterns going; we gesticulate and motorize the speech reaction. In short, if and when an individual has motor conditionings, visceral or emotional conditionings and also verbal conditionings toward a given stimulus or situation, then he can either talk about it, do it or emotionalize concerning it, and any one of these types of response will tend to set off either or both the others under any but inhibitive conditions.

It should now be clear how verbalizations can form the basis of new learning in a motor sense, under certain rather limited and special circumstances. It is perhaps better to say that certain verbalizations can help to initiate other learning. Suppose,

for example, that an individual has formed, with reference to driving a car, certain emotional habits of self-control and the inhibition of fear and anxiety, which emotional habits are part of a general system or larger pattern of habits with reference to the car, including adequate verbal habits expressive of the emotional control as stated. Suppose, now, in addition, that such an individual begins to learn the motor habits involved in flying a plane, and finds himself in such a situation that he begins to fear and become anxious, not having yet established emotional habits with specific reference to planes. He then says, overtly or sub-vocally, "Hold on, I must retain self-control; if I don't, I'll spill. I must keep my nerve," and the like, which verbalizations, being part of a larger pattern associated with car driving, set off their associates and the emotional control sets in. In short, words can act as adequate stimuli for emotional or for motor behavior if and when they form a part of a larger cogent pattern of response to some other given situation, involving the elements of response germane to the new problem. Putting this differently, a child can be told to "be brave" in the face of pain, and if he has been brave in other situations, i.e., knows how to thus act, and if such words are also a part of that pattern of response, then the words will call forth the required behavior, other things being equal.

To summarize, we have usually, with reference to any given stimulus or situation, three sets of conditionings, (motor, verbal and visceral-emotional) which, because they act with reference to the same stimulus-situation are, *ipso facto*, part of the same general pattern of response. Touching off any one of the sets will tend to touch off either or both of the others though it is also true that, with disuse of the pattern or absence for a long time of the adequate stimulus, the whole pattern or some one part of it may become relatively inactive. Thus, we may forget in the verbal sense, or in the motor, or we may remember verbally and act properly objectively, and yet no longer have an appreciable emotional response. This may be because of several reasons, a discussion of which is not necessary at this point. But it should now be clear that new motor learning or new emotional learning, or learning emotional or motor behavior with reference to new objects which behavior has previously been exhibited toward other objects, can take place in terms of and through the medium of language if and only if there exist patterns of response which are adequate and which also have verbal aspects. We can transfer, as it were, an old motor or emotional response to a new situation through language if we have, first of all, the

proper pattern of response, and second, a verbal associated and included aspect whereby it can be touched off. But however good our motor or our emotional habits may be, if we cannot verbalize them we cannot summon them to a new situation which is not the proper stimulus, in itself, for the eliciting of the response in question. My own or another's language can summon many motor or emotional responses to be joined to new situations as new responses, but if I have no language or verbal aspect of a given pattern, then no language stimulus will elicit it in any situation, and only the original perceptual or motor situation will rouse it to activity.

This effectively answers the old, but not forgotten and still all too frequently invoked "ideo-motor" theory, which claims that an adequate verbal or ideational ability means also an ability to do overtly in a motor sense. An idea does not lead, as such, to motor performance unless by previous experience it is a part and portion of a total pattern with motor and verbal aspects. Incidently, we will meet again with this whole question of the verbal, emotional and motor aspects of response patterns in our discussion of Freud's so-called Unconscious, as well as in many other aspects of the abnormal, particularly in Part III. Patterns of behavior formed before verbalization or formed without verbalization or for which no verbalizations exist cannot be exhibited verbally, though verbal aspects of the pattern may be formed later under special circumstances and perhaps are part of the technique of re-adjustment from an emotional or motor point of view.[7]

[9]

Language, Introspection and Images. We have several times raised the general question of what is uncritically called introspection, i.e., that type of behavior which consists, at first sight, of consciously reporting the subjective elements or events of past or present experience. We have, already, in this and also in the immediately preceding chapters, examined and discussed the significance of consciousness, and there will be no need here to repeat what has been covered already. Here, however, it will be necessary to examine the subject from another point of view and to connect what has been said in the immediately preceding section on language and learning with what we have said concerning

[7] See Watson, *Psychology,* Chs. V to XI, particularly VIII and IX; *Behaviorism,* IX to XI. See, also, discussion and references in Part II, Ch. IV, Part III, Chs. III and IV. Also confer Platt, Titchener, Rignano, Broad and Pieron for more synthetic treatment. See careful criticism of ideo-motor theory in Moore, Pt. VI, throughout, but particularly Chs. II and III.

consciousness and extract from such considerations a meaning for the term introspection as a form of behavior that will be in accord with our general position and also enable us to see the ground on which verbal reports may be acceptable as evidence.

First of all, it will be well to endeavor to get a more exact understanding of just what is at issue, for the apparent meaning of introspection, which we have given above, is just that,—only apparent; there is in fact a wide difference in the meaning of the term as used by the behaviorists as contrasted with the speculative schools. If I ask you, for example, to recall what was written in the last paragraph, or to recall the introductory sections of this text, provided you have actually read them, i.e., had the necessary perceptual experiences involved plus whatever in the way of verbal reactions were indulged in, I am, in one very proper and exact sense of the word, asking you to introspect. Indeed, to use a simpler situation, if I ask you what time you got up this morning, you must, in truth, introspect to answer me. You could, of course, have a written statement made at the time you arose, to show me, but even then did not the mere making of that written record involve introspection? How did you even know that you got up? And another observer, watching you when you got up and reporting for you, would also bring in the same problem of introspection in this broad and all-inclusive sense of the word. In short, all memory is introspection; we introspect when we remember dates, formulae, events, and any and all other aspects or conditions of the past in verbal form.

But all introspection is not, of course, as simple and as definite as this. Thus, to give an example at the other end of the scale, suppose I ask you to recall how you felt when you were run over two years ago by a runaway car with twenty girls in it shouting wildly as they struck you? In this case, be it noted, I ask you how you felt, not what were the overt facts of the event such as time, place, number of bystanders, and the like. Here, you will find yourself much less glib, unless you are accustomed to just uncritically rolling off a number of words representative in a very dubious sense of this past experience. If you actually try to reconstruct the past feelings, if you actually endeavor to retrospect and now feel as you felt at the time, or "as if" it were now again that time and that experience, you will be introspecting in the sense of the term which is most open to criticism, and properly so. You may, of course, and this is the usual occurrence, have certain stock, rubber-stamp phrases or verbalizations which you use to "describe" all such experiences in later reports of them, but they will not be verifiable, authentic or worth much con-

sideration. If you are particularly honest, or can be brought to see all the elements involved here, you will then probably admit that you did not, at the time and in the situation, do anything about the emotional situation except just express emotions. You did not, at the time and in the situation, verbalize the emotions, i.e., make parallel, equivalent, symbolic, representative verbalizations concerning them. In short, one conspicuous difference is apparent immediately, namely, that we verbalize some aspects of an experience more consistently than we do others. The question of the accuracy of this verbalization will be considered later, but, while it is an important it is not a crucial factor so far as our present interests are concerned. But we can go still further along the scale of introspective dubiousness; thus, suppose I ask you, when you are angry, to tell me in what the experience of anger consists or, still worse, several hours afterwards, I ask you to reconstruct the experience in words? Or, to take a different example, suppose I give you, without your suspecting the questions to come later, two sheets of paper, one slightly thicker than the other, one slightly more tinted in the same shade than the other, one slightly more rough, more handled and so on, or even complicate the situation by having several such objects? And then, hours later, suppose I ask you whether the first was more this than the second, the second more something else than the first, and so on? This is introspection with a vengeance, for unless you deliberately, at the time, verbally noted and considered the actual judgment, made the actual observation in words, that this and that were the facts about the objects, the sheets of paper, you are reduced to either a sheer guess or to resort to what are vaguely called images, i.e., supposed present reconstructions, in some way, of the actual past perceptual experiences in question.

So far, then, and ignoring side issues and related topics for the moment, we are committed to the statement that only that which has been verbalized can be adequately recovered from past experience in words, as words. We may guess as to the proper present rendition in words of some event which we did not then record in words, which we could presumably have thus recorded, but it is then a guess on the basis of other extremely dubious processes unless we did, at the time, so record it, so verbally react to it and sort it away in terms of the proper all-inclusive patterns involved in the whole experience of the moment. It will be recalled that in the last section, on language and learning, we pointed out that there are three, or at least three, sub-patterns or systems of conditionings with reference to a given experience;

the motor, the emotional-visceral, and the verbal, and that any one of these being set into activity, the other can usually be also activated, but that no one of them can create another one, or translate itself into another, or take the place of another. When we remember, i.e., react in terms of past experiences and conditionings, one or the other or any combination of these three possible sub-groups is involved, but each is what it is and not another one. We can remember "emotionally," i.e., emote the way we learned and were conditioned to emotionally respond, or we can remember "motorally," i.e., overtly react the way we learned and were conditioned to act, or we can remember "verbally," i.e., repeat the words that were learned as a response to a given stimulus. But no one of these memories is the equivalent of any other, and while one may touch off another, if it is there, it cannot make it or bring it into existence and may not touch it off even if there.

Human beings are always prone to err in one way or another and to confuse issues and make abortive and incomplete and incorrect responses to any and all stimuli, but there is no reason for singling out one aspect of a possibly erroneous response as being more prone to error or being less dependable. Putting this differently, suppose I ask you, on the basis of what I otherwise know to be sufficient experience and adequate patterns of response, to strike a given note on the piano. I know you know it, i.e., I know your past experience has given you the proper patterns to thus respond to a verbal stimulus or request, or I may merely ask you to strike the same note I am now striking. You can err, either with deliberation, (that is, lie), or you can err for one of a dozen other reasons, distractions, emotional inhibitions, what not. Again, suppose I wish you to exhibit a given emotion which I know you can exhibit and which I know is tied up as a response to a given situation-stimulus. Again there is no guarantee you will respond accurately or "honestly." Many things may complicate and interfere. Finally, if I ask you what is the date of the Battle of Hastings, again you may answer correctly or incorrectly. Each of these instances is a matter of memory, of learning, of conditioning, all of which we discussed in earlier sections of this and the preceeding chapters. Each of these is also, in a sense, introspection; the verbal inquiry having only an apparently greater introspective slant, for in each instance I am tapping your past and assuming it is correctly exhibited. And in each instance, my inability or my failure to give a really proper stimulus and to avoid complicating and modifying elements of the situation which will touch off other

responses than the one or ones I want has nothing to do with the facts as here outlined. Introspection or retrospection are, in terms of our treatment, merely other terms descriptive of the process of memory and subject to the same qualifications we showed when we discussed that topic in detail. To be sure, we cannot remember what we have never learned, and it is that aspect of introspection which has made most of the difficulties, as well as the associate problem of images raised above, to which we will now again turn the discussion, to reach a preliminary statement of matters receiving more attention in Parts III and IV under the wider headings of dreams, delusions and beliefs.

Perhaps the most blatant and unfounded use of the word introspection is in connection with what are called images, and here we find no excuse at all for the term or the practice and are unable to find any proper modification even of the term image that will serve as a basis for introspection as we have discussed and re-defined it. For example, recalling the illustration given above concerning the color, thickness and other qualities of the experimental pieces of paper given to a subject, on which he is supposed to later retrospectively report through the creation and functioning of an image, so-called, which he is able to conjure up without perceptual experience, the question very naturally arises as to the structural possibilities of having such images. In the first place, it will be recalled that neural currents in a given nerve or connected system of nerves go only in one direction, i.e., from a receptor over an afferent nerve to a center, thence out over an efferent nerve to a muscle or gland, never the reverse. An afferent nerve from a receptor cell to a center will not carry a current back to the receptor cell, if it were in addition conceivable (which it is not) that the center could send a neural current equivalent to that received by a receptor cell in its ordinary stimulation by external energies of the environment. Hence, unless there is the adequate and proper energizing of receptor cells there cannot be sensation or perception as a result of such stimulation when carried over the proper neural afferent circuits to the proper center. And yet, in the usual uncritical, popular or introspective sense of the word image something like this reversal of circuits and the central origination of receptor stimuli is supposed to take place.

And, on the basis of this supposed and structurally inconceivable and completely incomprehensible image, an individual is supposed to introspect, gaze at that which he has literally resurrected from the past and which is here held to have passed away as percept in the very moment of having, being retained

only in terms of verbal and other conditionings produced at the moment, and in terms of relationships to prior experiences and conditioning. The introspectionist gazing at this image is then supposed to be able to "see", or to "hear" or sense with other senses, what he did not see or hear or experience when the actual percept was his to have and to hold. Or rather, to be perfectly fair, for this is an exaggerated claim not made by all adherents of the image theory, he is supposed to be able to read off and to translate into words what he previously did not so translate, in a word, to refresh and reorganize his previous experience which he did not attend to thoroughly at the time of its occurrence. But either the slighter or the severer adherent of this doctrine runs up against the general criticism above as well as some further matters now to be considered.

Apart from the structural and neural facts we have summarized above, and apart too from the further difficulties involved in our discussion of systems of conditionings as motor, emotional-visceral and verbal, discussed in the last section, there is another approach to the problem of images, one which gives us not merely a critical but a constructive solution to the difficulties. It is indubitable that there are what we call "images"; the real question is what they are, how caused, how to be accounted for structurally? And on both experimental and theoretical grounds, on the basis of structure and of function it is clear that what we call images are a minor or, at times, even a major form of what is discussed below, Part II, Chapter II, as illusions and "as if" attitudes, the general attitude comprehended under this phrase "as if" being one used also in still further developments of behavior, notably in connection with the psychology of belief. And images involve much the same thing though, usually, on a smaller scale.

An image, in short, is a perceptual error; it is a percept on the basis of insufficient or incorrect stimulation, and differs from other types of erroneous perception, more commonly called illusions, in that it is probably more dependent, for its incorrect basis of stimulus, on activities originating within the actual organ of sense itself. If we confine ourselves, for the sake of simplifying the argument, to the eye, it is notable that, first, the nature of the eye and its activity involve much inner activity, such as the ideoretinal lights, hypnogogic after-images, muscular stimuli due to the stresses and strains of convergence and accommodation and, secondly, that a slight and incorrect actual stimulus of the eye will set off complicated emotional-visceral-action patterns when they are set for action, i.e., when

there is emotional and motor expectation and readiness. Under certain circumstances, we can and do react to such stimuli "as if" we were reacting to an actual object. In short, we do not really see, but the patterns that would function if the object were actually there do function on inadequate and insufficient objective basis.

We can see camels and elephants, mountains and snowbanks in the clouds that are not really there, and on even slighter basis than such indeterminate stimulations, and even with the eye closed we can "see" almost what we will. The image is but the touching off of patterns, involving emotional-visceral or motor or verbal or all three varieties. We act "as if" we had the percept that we really have not got. But to all this, particularly to illusions and hallucinations, we will return in later chapters.

But enough has been said already to make clear that these erroneous perceptions cannot be the basis of new and exact knowledge through introspection. Such knowledge or verbal responses as are obtained on the assumed basis of introspectively consulting an image are worth nothing more than the merest guess without such images. In fact, decent judgment on the basis of wide experience is probably worth more in the long run and on the average than any consulting of images which results, at bottom, in exactly the same thing, namely the recombining of verbal and other conditionings of the past on the basis of an erroneous percept.

But to leave criticism aside for a moment and to come back to the general question of the value of introspection, it is clear that verbal reports of the past, or verbal formulations of expected and intended future conduct are to be received exactly as carefully and weighed as critically as any other behavior items of a given individual, whether an emotional-visceral reaction or a motor reaction. A verbal report is just that,—a verbal act of behavior, and we may as readily err in giving it as in estimating the size of a hole we are trying to step over, or the degree of anger that will deter a threatening enemy, and each should be received by an observer with the same open-mindedness and the same balancing of it with other circumstances and evidences of truth. We will again meet with this question of introspection when we consider dreams and the illustrative cases of abnormal personalities, for when we report that we have dreamed of taking a long journey, or when a given abnormal reports that he is Napoleon, we are, in both cases, dealing with introspection. Yet, in both cases and apart from other considerations of deliberate

deceit, we are getting excellent information concerning the behavior of a given individual.

One further minor point; it is sometimes claimed that, in the state of hypnosis, an individual can recover facts and material from images, make observations and reduce to words what was not verbally noted and patterned previously. Assuming the correctness of the material thus recovered in hypnosis, it should be noted that the explanation is not necessarily the correct one. We do not always associate all we verbalize in such way that the mere request that it be verbally repeated will suffice to bring forth the desired response. The verbal memories of the past experience may be connected with other memories not ordinarily subject to conscious, deliberate verbal recovery. This brings in the question of non-associated and dis-associated groups of memories, verbal and otherwise, and will be considered in detail in connection with our discussion of Freud's Unconscious.[8]

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[8] As for Note (7) above, and as follows: Sidis, Carr, Titchener, Hollingworth, Warren, under headings, Introspection, Images, Imagery. See, also, in general, Ogden and Richards, Pieron, Rignano.

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CHAPTER III

VARIATIONS AND ABNORMALITIES OF INTELLIGENCE

1. The Question of Norms and Standards. 2. The Distribution of Variations. 3. The Meanings of Normal. 4. Deviations Above and Below Normal. 5. The Causes of Mental Deficiency. 6. Other Traits of the Mentally Deficient. 7. Mental Superiority. 8. Other Traits of the Mentally Superior. 9. Mixed Types: The Idiot Savants. 10. Summary. Bibliography.

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The Question of Norms. When we realize that "intelligence" is not itself a thing, but an abstract term describing, as a type, a certain sort of behavior, which behavior carries the descriptive adjective, "intelligent", and which has the traits we have discussed, it will be seen that to "measure intelligence" is something of a problem. We can and do roughly distinguish this person as intelligent, that one as deficient, another as very superior, but we are usually hard put to it to show objective and substantial bases for our judgment. Vague impressions will not answer for the lack of such objective proofs or bases; but to find such bases is difficult. The first difficulty is that of norms; what standards to use, how to derive them, how to apply them. An analogy will perhaps make clear the difficulties involved. Suppose we wish to measure the "tallness" of several individuals, so as to determine which has the most, which the least of this "quality". It is, in this case, immediately apparent that "tallness" is but a way of speaking; what we really wish to do is to see which is taller, which shorter, in terms of some standard of measure. And, in this instance, we have such a standard, a foot rule, a yard stick, a meter stick, or any handy piece of material which will not change while we are using it and which can be so handled that each individual will be measurable in terms of its length. There is no difficulty here; we measure structure directly.

Now, while we did not directly and explicitly discuss the question of measuring the structure of intelligence in our previous chapter, it was implicitly clear that there is no way of directly measuring such structure, at least at the present status of knowledge. We cannot measure, say, the brain; neither its size, its shape, nor the area of the cortex, nor the number of cell bodies, even were these things observable during life, or if we

knew that they had any demonstrable relationship to intelligent behavior. To be sure, as we shall see, certain traits do correlate with deficient mentality or intelligence, but these deficiencies cannot, usually, be shown to exist when the individual is still living. What autopsies will reveal will hardly serve us as a means of determining the intelligence of individuals previous to death. And, incidently, the vexed question of potential intelligence contrasted with actual demonstrable intelligence complicates the matter still further, a topic we will discuss further on. But, as we have said, structure is, or at least we so assume, as a necessary basis for a science of psychology, so related to function that the one reflects the other. No structure, no function; functioning is the reflection of structure. So, as matters now stand, we can and must indirectly measure whatever structures function in intelligent behavior by measuring the behavior itself, classifying it, sorting it into degrees, types, and amounts. To repeat what we said above, this will, of course, not take care of the question of so-called latent intelligence, or possible intelligent conduct which, for one reason or another, is not exhibited. To this we will return, however.

But, even if we attempt to measure intelligence indirectly, that is, to rate intelligence by means of observing and weighing types of behavior which deserve the qualification, we still need to devise standards. How, among all the multitudinous acts which deserve the qualification intelligent, are we to find bases of comparison, subordination, excellence; how are we to compare, contrast, evaluate? This is, of course, the question of intelligence tests, the bases of which we will consider later, some principles of which, however, we must now briefly consider. We have already defined intelligent behavior as behavior that is adaptive, adjustive, but which is not either of the reflex and native type or the habitual or automatic type of some acquired abilities. Intelligent behavior is behavior which, when the individual is confronted with a problematic situation, a balking, a choice of perplexing alternatives, results in a solution that is satisfactory in its final effects, often involves verbalization, or at least some form of substitute language in the broader sense, though some instances may occur without this. We may then assume, at least as a basis for investigation, that a given problematic situation might well be used as a test of intelligence, and if a series of such problematic situations could be devised, each a bit more difficult than the preceding one, we would have a scale of situations, adjustment to which would rate the animal in the scale of intelligence or intelligent behavior.

Thus, returning to rats, we might devise a set of mazes, each one, from the simplest up, a bit harder, a bit more difficult, requiring just a bit more intelligence, or better phrased, needing a better structure on the part of the rat in order to be able to cope with it and solve it, i.e., adjust satisfactorily and get the food. Or, if we wished to stress the linguistic or language side of intelligent conduct, we could devise verbal or language situations, arranged in order of difficulty, and thus be able to rate the degree of intelligence of an individual, or ascertain his ability, on such a scale, to exhibit intelligent conduct, thus measuring, indirectly, whatever structures lay at the basis of such functioning. It is probably useless, at the present time, to hope to understand the structures involved; but it is worth while, here as always, to stress the fact that some structures, certainly very complicated, involving probably most if not all of the animal's nervous system, are what is really fundamental, even though we merely point them out indirectly and in terms of theory.[1]

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The Distribution of Variations. As a matter of fact, scales of both kinds exist; the one being called performance tests, and the second, language or intelligence tests, though both measure, through different mediums, the same thing, namely, the ability of the animal to adjust itself to a complex, problematic situation. On such sets of tests, whether of the one kind or the other, and leaving for later consideration further criticism and discussion, we actually find that individuals, animal or human, rate very differently. Some solve all problems, exhausting the scale; some solve up to and cannot solve beyond a certain point; some solve problems quickly, some only after long deliberation, and many and perplexing are the practical and theoretical questions which arise in these connections. But the essential fact for us to consider here is that such scales exist, whatever their defects, and that on such scales individuals show variation.

And such variations extend from almost zero ability to perfect ability to solve, in the case of a number of individuals of a group, the problems set for them. Thus, choosing a hundred thousand human men, at random, all twenty years old, and setting them to work at a given test, we would find some who would hardly make a beginning, some who would finish all the test in a short time, and greater numbers hovering about the

[1] Thorndike, *Theory,* Chs. I and II; Terman, *School Children,* Chs. I and II; McCall, Chs. I and II; Wallin, Chs. VI and VII; Hollingworth, *Gifted Children,* particularly Chs. I to IV. See also, Claremont, particularly Chs. IV and V, and Thorndike, *Measurement.*

center, i.e., doing a fair amount and doing it in fair time. If we wish to be more exact about the matter, we could take the hundred thousand men, set them, say, to adding columns of figures, and measure exactly how many figures were added, how many minutes taken, how many errors made, and thus prepare a rather decent score-sheet for the ability of men, twenty years old, to add figures. And from such scores we would be able to arrive at many interesting results and conclusions.

But we can complicate the matter still further, by taking a hundred thousand children, boys and girls equally represented, of each age from, say, five to sixteen, set them all to doing certain given tasks and find, not only variations as regards the achievements of those of any given age group, but variations as regards the achievements of one age group when contrasted with another. The ten year olds would do more, say, than the five year olds, whatever the problem. So, the question of standards becomes even more complex, and the variations even more numerous. One thing, however, soon becomes clear, namely, that whatever group we take, and whatever task we set as a measurement of intelligence or the ability to behave intelligently, we will find that the variations will distribute themselves in a rather definite manner. Roughly speaking, and allowing for special instances where the results of working with non-random, or special selection groups interfere, we will find that, in a given group, the scores representing intelligent behavior when arranged in order will show that the greater the deviation from the central or average tendency, the fewer the instances of such deviation. That is, whatever the number who rate average, there will be fewer just above and below these deviations and, as we get toward the extremely low and extremely high scores, there will be relatively very few. And this will hold true for any group, the make-up of which was not forced by special selecting. Thus, a distribution of scores representing the intelligence of men twenty-five years old, but all with Ph.D.'s would be skewed toward the upper reaches of a scale representing the abilities of a random group of men of the same age but lacking the training of the Ph.D. group.[1]

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The Meanings of Normal. From the above we can deduce several possible meanings of the frequently but often uncritically used word "normal." Normal may mean and often does mean, the average, the most frequently occurring attainment or score, and though these words, in the literature of measurement, have

some slight differences, they need not here be further distinguished. The normal, for any age group, racial group, sex group, in any and every type of test, is that score or ability which occurs most frequently. In the Binet-Simon test for children, used to ascertain their intellectual "age," such averages are made use of.

This is not to say that there are not other possible definitions of normal; thus, the popular sense of normal means, often, that which meets with approval, that which is the rage, the style, the expected. From a biological point of view one could define the normal as that which fulfills the evolutionary expectation, which is in terms of and in line with past performances and which is based on a full, a healthy and a well developed structure. All these, and other conceptions of the meaning of normal are often useful, but it is probable that the first definition, based on the actual test behavior of a random group (random, that is, with respect to the trait being measured), will best serve all purposes provided, of course, we take into consideration some of the implications and associated conditions. Thus, what is normal intelligent behavior for a group of present-day ten-year-olds may not be the same as that which will be normal three generations from now, and may not be the same as that which would have been found normal for a group of ten-year-olds three generations ago. In short, whatever we use as representative of normal, it will always be normal with reference to the group or groups which we have measured and from which we have obtained the norm in question. We have no such objective, material, portable, unchangable and interchangeable standards for intelligence or the measurement of intelligent behavior as have the physical sciences for their specific purposes. This need neither discourage us nor interfere with the use of such standards as we do have, provided we always and everywhere remember whence they came, and what limitations of time, place, group and test apply to them, something, incidentally often forgotten in the heat of practical argument concerning the meaning of the results of some specific test.[1]

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Deviations Above and Below. When we plot the results of some specific test of intelligence or adaptive behavior, and whether such test has or has not used language, i.e., whether it be a performance or a specific language test, and whatever units we use as division of the scale, we will find, as we have said, variations, diminishing in number as they increase in degree. Certain scores below the normal we will consider as definitely

indicative of deficiency in the ability to exhibit adaptive intelligent behavior; some we will consider as indicative of the ability to exhibit a very high degree of intelligent behavior, and we will probably be tempted to forget that the results are the results obtained from a definite test and to generalize widely and say that the individuals thus rating low are lacking entirely in intelligence, those rating high have a generally superior intelligence, both conclusions being dubious. We must again repeat, there is no such thing as intelligence, except as an abstract noun which we use to embrace, descriptively, all kinds of intelligent acts; it is not yet proven that an individual who rates low on a given test which assumes that it is measuring intelligence, is therefore lacking in anything other than the ability to do well in that particular test. To be sure, practical considerations, and considerable evidence of a somewhat loose order do tend to show that the wider conclusions are sometimes justified, at least pragmatically, but that is not proof. There are, as we shall see, many factors and conditions, and many other traits to be taken into account. All we can conclude legitimately and on a scientific basis, is that an individual rates as deficient or superior on a given scale, and only cautiously should we make claims that such scoring is symptomatic of general ability or disability.

It must also be remembered, to state this whole matter in another way, that tests of intelligent behavior are always, to some degree, artificial and special; constructed for a definite purpose, and that our observations and the score we give are also artificial and special; the real test of intelligence or the real measure of intelligent, adaptive behavior is life itself; that is, in so far as an animal solves the problem of living, survives his difficulties, it is, *ipso facto*, to that degree able to adapt itself to its environment, to that degree capable of exhibiting intelligent behavior, to that degree possessed of the mystical "intelligence". Whatever tests we arbitrarily devise, however we score them, whatever conclusions we derive, they are but substitutes, based on convenience or dictated by necessity; they may or may not really mean or imply, or prove equally great deficiency or superiority under other and more natural circumstances.

Another aspect of the situation is that involved in the concept of intellectual age and its relation to chronological age, or the so-called I.Q. Thus, going on the above assumptions of an average normal performance or score for the individuals of a given random group of a given age, we can otherwise state it that for the age ten-years there are definite tasks, requiring adaptation, i.e., intelligent behavior, which tasks the normal,

average ten-year-old can just do. His chronological age is thus "ten", and his "mental" age, as shown by his ability to do the tasks normal for those of that age, is also ten. The fractional value, obtained by dividing his intellectual or mental age by his chronological age is 1 or 100, depending on how one writes it; but had his attainment on the scale been that of the average five-year-old, his I.Q. or the relation between the two ages would have been .5 or 50; likewise, had his attainments reached to the fifteen-year-old mental level, his I.Q. would have been 1.5 or 150. This concept of I.Q., provided we remember all the criticism made above against tests and the assumptions they are based on, makes an extremely useful device for putting deficiencies and superiorities into fairly definite figures. On this basis, and always remembering the numerous provisos, we may more or less arbitrarily call an individual with an I.Q. of under 20 an idiot; one whose I.Q. is between 20 and 40, an imbecile; types between 40 and 70, morons; 70 to 85, border-line cases; 85 to 95 slow and sluggish; 95 to 105, normal; 105 to 115, bright; 115 to 125, gifted; and apply other more or less indefinite terms representing ever greater gifts and abilities up to "genius" to those who rise still higher. Naturally, these quantitive results or ratios are subject to suspicion; they certainly do not indicate sharp divisions of mentality or intelligence; they merge into one another and are, at best, a convenient system of rough classification. Incidently, in qualification of our remarks about the relative distribution of variations above, it is roughly true that, whatever the number, per thousand of population, of idiots, the imbeciles are about three times as numerous, and the remaining deficient groups, taken together, three times as numerous as the first two put together. All varieties or degrees above imbeciles are frequently called, collectively, feeble-minded, sometimes morons, sometimes mentally deficient, but the nomenclature is far from being exact or universal and, for this reason, the I.Q., for all its possible deficiencies, is perhaps the most useful descriptive term for any and all degrees of intelligence. Tredgold reports, for 1906 in England and Wales per 10,000 of general population, two idiots, seven imbeciles and twenty-nine feeble-minded, the latter evenly divided as regards adults and minors.[2]

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Causes of Mental Deficiency. Since functioning depends on structure, and since intelligent behavior is merely one kind of

[2] As for Note (1) above, and as follows: Tredgold, Goddard, Terman, *Studies,* Porteus, Pintner, Thorndike, both references.

functioning, the lack of this trait or ability or its presence in excessive degree would seem to imply, as basis, a corresponding inferiority or superiority of structure. While little has been done as regards the structural basis of superior degrees of intelligence, much work has been done on the lower types, particularly with reference to structural defects of the nervous system, the nerve cells and the general cerebral development. While the connector side of structure has thus been emphasized in these investigations, it is at least theoretically apparent that serious defects in either receptors or in effectors would also spell deficiency in the ability to exhibit intelligent behavior, though one might here raise the more or less theoretical question whether such defects as were due to receptors or effectors, no matter how good the connectors, would be actual deficiency in intelligence or merely lack of means for exhibiting it, a question to which, in other forms, we will return.

Another aspect of this problem must also be at least briefly touched on here to be treated further later, namely, what relative share does heredity and environment bear in the matter of deficiencies (or superiorities) of intellect. Here again, it is largely a matter of definition; deficiency is actual deficiency, and not just the hiding or the lack of development due to lack of proper opportunity. Thus, while environment may be blamed for lack of development, it cannot be blamed for defects in structure which existed in the germ or embryo. There is thus one decided line of division of instances of mental deficiency into those due to germinal inheritance, intrinsic variations in the germ of either or both parents, and called primary deficiency and that due to injuries, through disease or accident, after conception but before, during or after birth, called secondary, or extrinsic. In each of these types, there is actual structural change and deficiency and hence intelligent conduct, dependent on structure, is itself deficient. That other type of environmental influence suggested above, where there has simply been a supposed lack of opportunity for the development of intelligence we will consider later. It is the general consensus of opinion that by far the larger group or proportion of deficiencies of structure on which are based deficiencies of intelligent behavior are actually intrinsic, inherited, germinal defects and are, in terms of our discussion, primary.

As primary causes, i.e., those affecting the germ itself and therefore setting up a structural defect which later reveals itself in a defect in the structure of the developed ovum, are alcoholism, tuberculosis, syphilis, consanguinity, age of parents, and the like;

while such things as abnormal conditions of the mother during pregnancy, physical injuries to the foetus, abnormalities of the process of birth, injuries to the child after birth, certain diseases, deficiencies of diet, toxins, and the like, are considered as secondary, non-inherited, acquired causes of deficiency. Certain other vague terms, such as a neuropathic inheritance, are also often cited as causes of primary deficiency of intellect, but the term almost assumes what it seeks to prove. Perhaps what it really means is that, in a family with many instances, for several generations, of deficiency, insanity, epilepsy and alcoholism, feeble-minded children may be expected. As has been said, the secondary type is, relatively speaking, much less frequent, and the question has been raised to what degree are secondary types really masked primaries, i.e., children whose inherited outfit and structural make-up was so poor, so on the border line, that the slight push or injury or disease was sufficient to make of a potential an actual case of deficiency. Many children survive severe accidents, poisonings and diseases; some succumb to relatively light attacks and injuries. Presumably a structure which will not withstand normal and usual attacks is, in some sense, deficient to begin with, but apart from speculation it is impossible to treat of this matter and after all, whether we call deficiency primary or secondary, is largely a matter of convenience and classification. The point of real importance is that deficiency of structure goes with deficiency of behavior.

Having discussed the causes of deficiency it is proper next to consider the actual deficiency and here, again, while there is reasonable agreement, some exceptions and qualifications may well be made. Gross variations of external structure, such as an enormously large, or a very small, or a highly unsymmetrical head, as such, cannot be held to be the deficiencies or abnormalities of structure which forbid or inhibit intelligent behavior. While such things may and often do accompany those defects in internal structure which are the true bases for deficiency, they are not, in themselves, deficiencies of that structure which makes for intelligent behavior; while they are frequently associated with deficiencies of such behavior, they are neither essential nor does their presence guarantee abnormalities of intelligent behavior. The real basis is an imperfect or arrested development of the neurons of the nervous system particularly, in all probability, of the cerebrum, due in turn, to the causes, hereditary or secondary, which we have already enumerated. Going somewhat more into detail, it is structural defects or structural deficiencies of the following varieties which are the actual basis

of the inability to so behave, in any given situation, as to deserve the description "intelligent"; numerical deficiency of cells in the cortex, often associated with a thinness of the cortical grey matter obvious to the naked eye upon autopsy; second, irregular arrangement of the cells, particularly of the so-called pyramidal cells, examination showing many lying obliquely or even upside down; thirdly, incompletely developed cells, shown by abnormal shape, imperfect pigmentation and, frequently, poor development of dendrites. In addition to these cellular defects, some of them resembling the status and structure of the brain cells of the apes, we find also defects in the number of association fibres, an overgrowth of neuroglia (sclerosis) often all through the whole brain, frequently resulting in a condition that is almost cartilaginous.

The above histological defects do not exhaust the list of structural peculiarities which are associated with mental deficiency; certain gross anatomical traits are also symptomatical of the condition. While it is apparently the concensus of modern opinion that the cellular deficiencies are the most important and the really essential basis for amentia or deficiency in mental and intelligent behavior, yet in many cases other, grosser imperfections exist which can be seen with the naked eye when laid bare. These comprise major faults of brain development and, second, lesions. Faults of brain development, which must not be confused with peculiarities of the external skull, though often associated, comprise changes in size, shape, texture and consistency of the brain itself, irregular or peculiar configurations and convolutions, or peculiarities of other parts of the central nervous system. These variations range from minor ones to some so severe that the individual does not survive beyond a short period of time after birth, as in the case of the complete absence, say, of the medulla or the cord. The malformations of this type found after death in those who have lived to adult life are much less severe. The lesions, on the whole, are after effects of pathological processes, which produce what we have called secondary amentia, though they may and do also complicate the primary form. Furthermore, while secondary amentia may present, on autopsy, some of the characteristics of cellular degeneracy or mal-development which we have spoken of as characterizing primary forms, the changes in the former instance are usually more local, and isolated, and occur in a brain which, otherwise, is normal.[3]

[3] Particularly Tredgold, Chs. I to VI; Schlapp and Smith, Chs. I to III, Bk. II; and as above for Notes (1) and (2). See also, as previously noted, Herrick, Dunlap and model of brain.

[6]

Correlated Traits. This brief summary of the main findings of the anatomist in the cases, respectively, of primary and secondary amentia or mental deficiency while they bear out our original contention that structure and function are one and inseparable, each reflecting the other and being merely different aspects of the same facts are, in the main, defects of that aspect of the total organism which we discussed under the heading of "connectors." It is a moot question, both from a practical as well as a theoretical point of view, whether such deficiencies of the brain and central nervous system as we have described are the sole and only cause of that deficiency of intelligence which is called amentia. The nervous system, however important and however indispensable to proper functioning of the organism is, none the less, but the central link between receptors and effectors. While all severe cases of amentia, either primary or secondary, do apparently show more or less grave defects in the structure of the connector system as a whole, or in some particular part of the connective and associative system, it is still fair to inquire what effect grave defects in receptors or effectors would have on behavior. Primarily, in a sense, it is again a matter of definition, and if we wish to use the term mental deficiency for cases where mental behavior is deficient because of defects in connectors, it is fair to do so, provided it is realized clearly that the definition signifies just that. In which case, however, we would need other terms to describe deficient conduct due to deficiencies other than in the nervous system, provided such abnormalities could exist apart from defects of the central connector system. One could construct and suppose various hypothetical cases; thus, suppose disease to destroy all sense organs but touch early in life. Probably, in this instance, the disease would also ruin the central system and we would hence have a case of secondary amentia. Accident would hardly ruin all distance receptors without destruction of the organism, and the same arguments apply to the case of the effectors. So that, on decent grounds, it is probable that defects of the senses or the effectors would not occur in serious degree without an accompanying defect of the nervous system. Still further, with grave defects of receptor apparatus, the brain does not develop in those regions particularly concerned with the sorting and co-ordinating of the specific types of neural energy from the sense organs in question so that, even when defects in receptor apparatus exist, if serious, they result in the same lack of development that we found characteristic above. It is simply another instance where it becomes clear

that the organism is an organism and no mere collection of parts. Such cases as those of Laura Bridgeman, Kaspar Hauser and Helen Keller are instances where the point raised above concerning sensation and perception are involved; thus, Laura Bridgeman, at the age of two, lost hearing and sight, and smell and taste became impaired. While she lived to sixty, and developed many abilities, using touch as the medium of communication with the external world, her brain, on autopsy, showed lack of development, deficiency of neurons, non-development of several portions, and the grey matter of the cortex was thinned out. Hauser, on the contrary, while not structurally deficient as regards sense organs, was so deprived of the opportunity for the proper exercise of them, having been confined in a dark cell for perhaps the first sixteen years of his life without any contacts or training, with inadequate food, exercise and stimuli, that even when restored to normal surroundings, he never caught up with normal development. Post-mortem revealed a brain smaller in size than normal, with convulutions under-developed. While we cannot here go into the details of other and similar cases, enough has been said to establish the close connection, from another point of view, between the activity of effectors, receptors and connectors, and to show that deficiencies in any one direction are either accompanied by or result in deficiencies in other directions.

But apart from such special and a-typical cases, there is perhaps little use, at present, in attempting to distinguish between cases of amentia due to defects in the cerebral and nervous system and those due to defects in or lack of use of the sense organs. The stimuli from the outside world, transformed by the receptor cells into neural energy, are part of the necessary basis for the proper development of the central nervous system. On the whole it is fair to make two statements; first, that defects of sensation occur in proportion to the degree of amentia, each thus being, as it were, both cause and effect; secondly, that delicacy of discrimination is usually absent, sometimes even in the milder cases. In taste and smell, apart from delicacy of differentiation, some aments will tolerate the worst tastes and smells, apparently finding nothing peculiar in them. As regards sight, there is frequently a failure to distinguish between shapes, sizes and colors that are closely related, even in the milder cases, whereas in the more pronounced cases and degrees this failure is very marked. Hearing is not so frequently disturbed, though responses to auditory stimuli are often so slow or so inhibited that deafness is wrongly judged. Touch and temperature senses are also dis-

turbed, particularly in the greater degrees of amentia, but it must always be remembered that there are exceptions, where great delicacy of some one sense is shown, and that, secondly, the sense organ may not itself be defective, though responses in terms of stimuli affecting a particular organ or any organ may not be responded to overtly, thus placing the difficulty in terms of attention, meaning and the like, defects due, once more, to deficiencies of the central nervous system. Conclusions similar to the above can be drawn with reference to the kinaesthetic and visceral groups of receptors and sensations, and much the same may be said with reference to the appreciation of pleasure and pain; the lower one goes, the greater the deficiency, and the greater the inability to make relative distinctions between degrees of the one or the other. Naturally, as we go up in the scale of behavior levels, we find greater defects, for the more complicated the process, and the more it involves the higher centers, the more any given degree of central structural deficiency will affect it. What, in general psychology, are called perception and attention are notoriously deficient. If by perception we mean that process whereby we recognize an object and respond to it in terms merely of partial indications of its presence, a process whereby, on the basis of past experience, we place, recognize, react to the meaning or significance of an object, a person, a situation, and if by attention we mean a preparatory, selective, meaningful conscious exploratory reaction, then the feeble-minded, the aments, the mentally deficient are, in proportion to the degree of deficiency, also lacking in these abilities. In a sense, the lacking in these abilities is the outward and manifest sign of an inward and structural deficiency, for intelligence, to rephrase the terms in which we have already defined it, is just that ability to adjust in terms of situations and reactions which involve attention and perception. Equally as natural is it to find that what we roughly call memory, association, imagination, thought, judgment, reasoning, foresight and the like, will be notably deficient in the mentally deficient, for it is again the lack of these abilities which make the ament what he is. Structure being deficient, behavior cannot be normal. The same holds true of what might be called the social, the emotional and the aesthetic reactions and behavior, remembering, of course, that these, again, are in no sense disconnected, isolated reactions, but equally represent the nature, the structure, the status and the past experience of the whole organism. But to this it will be better to return after further considerations dealing with the superior, and

also, as a much later subject dealing with complex thought—emotional disturbances in general.[4]

[7]

Mental Superiority. To discuss mental superiority naturally, to some extent, implies presenting the opposite picture to that which we have just examined but, in part, it is impossible to do so for, anatomically speaking, what few examinations have been made of the structures of the gifted and the genius do not reveal a type of structure or a development of parts that is as much above what is normal and usual as those of the aments are below normal. In fact, histology and gross anatomy seem to offer little that is satisfactory for the structural explanation of the behavior of the superior, those whose mental behavior, whose intelligence, whose abilities, are above par. Also, we again have the same problem, that namely, of deciding on what basis, and by means of what tests we shall decide which children, which adults, are superior. In the previous discussion, we showed how a scale has been devised which, by virtue of representing what average, regular, unselected children do, we had a means of determining to what degree other children or adults would fall below average age attainment, and we described what is called the I. Q., or intelligence quotient, as representative of the resultant rating on such scales. We also, however, pointed out that such scales are, to some extent, arbitrary and artificial, and are not theoretically or practically the same thing as life itself. To solve problems on a scale or to do well on a test does not guarantee success in life, and there are a host of associated problems here which will be examined in the next chapter. But, taking the scales for a momentary center of discussion, we find that what are called superior children will attain to I. Q.'s up to some 180 or even 200, i.e., will have a mental age apparently some twice that of the normal child. A recent investigation, attempting to approximate, on the basis of authentic, recorded biographical and autobiographical material, the mental ages and I. Q.'s of famous and gifted men and women of history is an instance of the dubious value of such methods. While most of the persons investigated received, in the test, extremely high scores or quotients (though the whole matter was at second hand) the sum and substance of the conclusions is that superiority on a scale is not the same as superiority of achievement in real life, for some of the higher rating individuals apparently achieved

[4] Tredgold, Goddard, Wallin, Mateer, Hollingworth, H. L., throughout. See also Herrick and Bagley.

less, in the conventional sense of the word "achieve," than those with a lower rating. Once more it should be noted that a score on a test is just that,—a score on a particular test and guarantees nothing further.

We have seen that the majority of cases of deficiency of mentality or intelligence are primary, i.e., due to heredity, deficient structure as determined by germinal inheritance. The same is true with reference to what we call superior intelligence, as is indeed also the case for normal ability, for this is merely again to say that abilities of any kind are but the reflection of structure of the appropriate capacity, appropriately stimulated and used. And, following the same argument, while it is conceivable and, perhaps, even demonstrable that structures which might have evinced superior abilities can remain undeveloped, unused, we must remember that too much lack of use results in degeneration, and that even where a late development is demonstrated, it is still on the basis of structure. And, furthermore, no structures can be made from nothing; whatever intricacies of cross-connection and association, whatever delicacy and detail of associations, spell intelligence, they are always on the basis of what was there to begin with. Else, of course, it is futile to even endeavor to come to conclusions on the matter.

A group of superior children now being investigated (Cox, Terman), and numbering some 640 individuals, all rate over 140 (I.Q.) including some 15 who rate above or just at 180 I.Q.; and it is probable that the group above 140 amounts to less than one half of one percent of the total juvenile population, while those above or at 180 will amount to less than three percent of this whole gifted group, perhaps roughly, one child in a million. Other figures, from Terman, show interesting comparisons between the distribution of the inferior and the superior. Thus, the lowest 1% of children go to an I.Q. of 70 or below; the highest 1% to 130 or above. Recalling the figures of Tredgold, relative to the incidence of pronounced degrees of mental deficiency, and comparing them with the above, it would seem that what we have more or less arbitrarily designated as severe deficiency is more prevalent than high superiority. Thus, as reported above, Tredgold finds for each 10,000 of population, 2 idiots, 7 imbeciles, and 29 feeble-minded, adult and juvenile. If we take Terman's finding for children with "genius" or "near-genius" (I.Q. 140 or above), the less than one half of one percent falls below this figure, and the top-reaches of one individual with an I.Q. of 180 per million individuals is far from being as frequent as the 2 idiots per 10,000, and since Tredgold calculated on total

population, and Terman on juvenile population, it is evident that were the calculations reduced to common bases, the contrast would be still more pronounced. But, in all these matters, we are dealing with sliding, arbitrary, dubious assumptions and calculations, and it may be that we shall later discover, through the use of different tests or different methods of scoring, or ways of finding superior children, that these figures will have to be considerably changed. And it must not be forgotten that there is always the possibility of superior endowment going to waste, never realizing its potentialities, even though it does succeed in remaining at a normal or slightly better than normal performance. But this is, of course, highly theoretical and speculative; we really do not know.[5]

[8]

Correlated Traits. In speaking of correlated traits in our discussion of the deficient groups, we found deficiencies in sensation (perception), accompanied, necessarily, by defects in such processes as are termed, roughly, memory, attention and the like, and while we did not discuss the gross physical traits, such as appearance, stature, susceptibility to disease, weight, nutrition and related matters, it will be worth our while to make a comparative summary here. Contrary to what might be called general superstition and uncritical belief, gifted children are not under the average in height or weight; on the contrary, they are slightly taller and more than slightly heavier, whereas the mentally deficient are definitely shorter and very definitely, with some exceptions due to glandular causes, under the average in weight. The gifted mature early, the deficient late; the gifted have better health, on the average, greater freedom from infection, greater resistance to ordinary diseases, than do the deficient; they are physically stronger, have more endurance, are faster in reactions, handle their own bodies better. Still further, their sensory acuity is above the average, their memory, their ability to attend, and all the associated traits are remarkably superior, as might well be expected since, as we have pointed out, such traits are merely, as it were, another way of expressing what we have called intelligent behavior. Wiggam, on the basis of some investigations would go even further; his thesis being, in general, that there is a high correlation between all good traits; that the intelligent is the healthy, the better balanced and saner,

[5] Particularly Terman, *Studies*, Hollingworth, L. S. See Wiggam also, particularly for details in connection with following section on Correlated Traits.

the more active, the stronger, the longer-lived, the more beautiful, the more social and the more moral. While we have yet to investigate the probability of some of these things, particularly the emotional and social and moral side, it is well to note the matter now; all behavior is founded on structure, and that structure which makes for intelligence is also such structure as is perhaps further able to cope adequately with other matters of the environment. To be sure, there are other factors to be taken into account; thus, it has been argued that the intelligent are taller and heavier because their intelligence enables them to obtain more and better food, though this ignores again the fact that even when the deficient are taken care of and fed properly, they usually fail to reach even the normal standards of height and weight. Similar arguments apply, pro and con, to the other claims of correlation; but, as a matter of fact, while we are sure of some of the facts such as height, weight and sensory abilities, it is probably true that some of the other correlated traits are as much effects as correlates; perhaps, particularly, the matter of social and moral attitudes. The question is, of course, whether social and moral conduct depends on intelligence or is, itself, another type of learning, proficiency in which goes along with the former; whether, that is, much the same structures, or different structures, are involved. To this we will return.[5]

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Mixed types. To further complicate this whole problem of the relation of intelligent behavior to normal or better than normal structure, and to again bring insistently forward the whole question, to be discussed further later on, of what the relation of training to ability is, we have to consider the so-called idiot-savants, or individuals very low in the scale with respect to most or many things, but very high up in the scale with reference to one or some few abilities. While the term idiot-savant is the usual one, the status is better described by speaking of an individual of mediocre or moron degree of intelligence who has one or more remarkable abilities, so remarkable, often, that they are not equalled by any but one or two other individuals, regardless of I.Q., in a very large group. Sometimes this ability takes the form of some special sense acuity, such as the ability to detect by smell alone the clothes belonging to various people, or the possession of almost microscopic acuity of sight, or the ability to detect extraordinarily minute differences of form or color, or especially sharp hearing, or a great sensitivity of touch. Sometimes the ability is motor, resulting in incredible

capacity for mechanical workmanship, or drawing and carving, or exceptional verbatim memory without realization of the significance or meaning of what is repeated. Sometimes these capacities last only till maturity, though often till old age and death. Other instances include such abilities as the naming of the day of the week for any given date of year and month; the calculation, instantly, of how many minutes an individual has lived since birth; prodigious feats of "mental" arithmetic, such as giving, in six seconds, the value of 2 to the 64th power, an answer requiring 20 digits to express it; or the instantaneous extraction of square and cube roots, even with decimals; or the immediate division of prodigious numbers one by another; or the ability to repeat, with microscopic detail, the events of the past twenty or thirty years,—abilities which put to shame even the best efforts of the most gifted individuals. But all these individuals are, in other respects, incapable of competing with the ordinary problems of everyday life; are, in fact, apart from their strange and special abilities, incompetent and deficient.

To explain these abilities structurally, is difficult if not impossible in the present status of knowledge of structure and its function. Some of these individuals were cases of primary, some of secondary mental deficiency, some were very deficient, some moderately so. Whether such abilities are due to the constant practice, the limited interests, the lack of competition in other lines, the endless time spent, or whether they represent the lone and single vestiges of a once more uniformly endowed structure, or whether they are the products of special structural developments in the central nervous system is impossible to say or even suggest.[6]

[10]

Summary. So far, then, in our discussion of abnormalities of intellect, or the ability to behave with intelligence, we have raised several questions; first, what is the meaning of normal, how are we to create means, other than the slow, cumbrous, time-taking processes of living itself, that will enable us to diagnose not merely deficiencies and superiorities, but degrees of each; secondly, what is the structural basis of deviations from the normal, assuming we can adequately define that. Third, another problem constantly insisted on making itself felt, namely, to what degree are nurture and nature inter-causative in the matter; that is, would superior endowment suffer from lack of training and opportunity, or would inferior endowment finally come to

[6] Tredgold, Chapter XIV.

behave adequately with sufficient opportunity and training. Almost certainly, the answer to the latter question is No, the former still offering some difficulties, though it is clear that complete lack of all opportunity for normal behavior would result in either arrested development or atrophy, making consequent normal development impossible. But, in every case, it is still basic that only structure, whatever compound it may be of inherited unmodified structure plus the changes due to experience and conditioning, can ever result in any species of behavior. Intelligence is decidedly not a power, or ability, in and of itself; it is a type of behavior; an important type, perhaps one of the most important, though to say even that is sometimes to tend to ignore other and equally serious matters such as character, temperament, and the emotional conditionings. These are matters yet to be investigated in subsequent chapters.

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CHAPTER IV

INTELLIGENCE AND GENERAL BEHAVIOR

1. Intelligence as a Mechanism. 2. The Relation of Drives and Intelligence. 3. Intelligence and Its Relation to Facts. 4. Intelligence and Education. 5. Character and Intelligence. 6. Intelligence and Morals. 7. The Problem Child and the Criminal. 8. Tests and Measurements. 9. The Training of Intelligence. 10. The Humanizing of Knowledge. 11. Summary. Bibliography.

[1]

Intelligence as a Mechanism. The proverb tells us that the race is not always to the swift; certainly, it is not always to the intelligent, unless we greatly extend, far beyond the limits as defined in an earlier chapter, the meaning of that term, or unless we identify "intelligence" and whatever we mean by "success-in-general". It must never be forgotten that intelligence is a tool, a mechanism, a means, a where-with-all, and in no sense a drive, a self-starting or initiating device. Thought always comes after, even when it may seem to come before; forethought is always afterthought, though the conditions which it follows, particularly in the light of what is to still further result, are often hidden, unacknowledged, even deliberately concealed from others and the very individual himself. Speaking in terms of biological structure and its evolution, intelligence is a late development in structure for the co-ordination of stimuli and responses, for the enabling of the organism to respond to more complex situations than would otherwise be possible, for the bettering of such situations as existed when mere reflex was the only possible answer to a situation, be it simple or complex. When one and only one or a mere alternation of responses was the only possibility, or when habits based on such simple elements exhausted the response powers of an organism, when no delay in terms of "consideration" and "weighing" was possible, there was then, properly speaking, no intelligence. There was only stereotyped responsiveness, win or lose tactics on a simple and more or less uncomplicated reaction, mechanical at the lowest level, whereas intelligence, as we have defined it, it makes possible, with just as much definiteness and determinism, a response not merely in terms of the momentary stimulus or situation, but in terms of previous experiences that resemble, even remotely, the one at issue. Intelligence does not free the animal of its past; indeed,

if anything, intelligence makes the past even more significant and determining as regards conduct, but it does broaden the field in which the determinism works.

Expressed in other terms, this means that we think in order to live, to survive, to adjust, to solve problems; never, in even the most abstract situations, the reverse of this; we think in order to live, we do not live in order to think. Even the aloof and seemingly ascetic and unemotional philosopher, decrying with all his ability, the lures and the pitfalls of living, and calling it all illusions and deception, is yet merely thinking in order to live, for the very system which he creates, in terms of words and phrases, in terms of syllogisms and symbolic logic, is but the expression of his drives, highly specialized to be sure, but still the same drives which animate the peasant and push him on in his different round of activities. Sane and insane, feeble-minded and genius, differing as they do in the expression of life and in its valuation, are yet all driven by the same set of impulses and desires, differing of course as regards momentary and relative activity from individual to individual, but fundamentally alike, even identical. Sage and sinner, fool and philosopher, worker and thinker, poet and peasant, all exhibit, in their superficially different conduct, the pressure of the same needs for food, shelter, peace, happiness, freedom from pain, the attainment of the esteem of others, the same effort to satisfy various and manifold hungers, sometimes crudely, sometimes more delicately, but ever the same. But all this will again be considered, in great detail, in our discussion of Personality, in Part IV.

This is in no sense to deny the value of intelligence; it is simply to place it where it properly belongs in the behavior of human beings. Intelligence can be, in one individual, a socially and individually useful and even extremely valuable instrument, and bring to group and person alike a success and a wealth that were not there before; yet the same degree of intelligence can be, in another individual, destructive, degenerating, defeating its biological purpose and its real significance. To be intelligent, unless we identify intelligence with successful and healthy adaptation, guarantees nothing. One can be dumb and happy; be a genius and a grotesque failure. Intelligence can grow inward, as it were, and destroy itself. But to this general topic we will have to return several times and see its significance from several different points of view before it is justified by evidence and concrete detail.[1]

[1] Woodworth and see, also, references to Chapter IV, Part I. See, also, Herrick and Bagley for determinism versus freedom.

[2]

Drives and Intelligence. It will be worth while, however, to consider here, in a preliminary sense, some of the relationships of drives and the mechanism of thinking, taking into consideration several matters we have previously discussed. When we considered the rat in the maze, and observed his conduct, we came to the conclusion that his behavior on the basis of the hunger drive, which led finally to the obtaining of food was, so far as it went, a sign of "intelligence"; that is, it was what we called adaptive conduct; it resulted, through learning, in the solution of a problem and the satisfaction of a need. The rat most certainly did not learn to run the maze for the joy of learning to run mazes; most certainly its behavior, whether we choose to call it intelligent or not (since language and reasoning was almost certainly not present), was adaptive and pragmatic, was in the interest of a drive. And, in this case, the drive was a normal, natural one; one that was wholesome, common to all animals, productive of good results for individual and race. But suppose the rat's drive for food, through any one of a number of possible types of conditioning, had been so changed that only food actually bad for the animal and its health was desired, what then? The same desire, the same drive would still, unless the animal had already so far degenerated that it could no longer function, result in the same "intelligent" behavior. The rat will as readily learn to run a maze for the obtaining of bad food, once it has been conditioned to like and desire that bad food, as for good food. And as with rats, so with men, and all the more so.

For, as we have provisionally seen, all drives, no matter how primitive or how nearly so-called "native" they seem, as actually exhibited in behavior, are more the result, in the final analysis, of training and conditioning than of any set form due to nature, and are hence determined in large measure by the environment, physical and social, though naturally also taking structure into account. This being so, it is not only possible, but even likely, that an individual will, in the course of his training and conditioning, acquire drives which can, through intelligent behavior, be actually attained to, but which do not make for the real benefit or well-being of the organism. Far-fetched examples, such as desires and hungers for drugs or a very pronounced urge for alcohol are not the only examples; they are examples, but being pronounced are, to that extent, abnormal. A more normal situation, and one much more frequent, can be found in terms of any

of the more conventional drives often, as with McDougall, assumed to be native but, as we have seen, really acquired. Thus, the so-called "collective" drive (improperly called an instinct), and which is, of course, acquired, may and often does result in conduct which is actually non-beneficial or even fundamentally and, in the long run, destructive to the well-being of an individual but which none the less, within the more or less confined limits of its operation, calls forth what we have called intelligent behavior in its service. The desire for social approval may, likewise and equally, be destructive to the individual when and if it is out of proportion, and the same holds true for other desires. In the field of the abnormal, we find many instances of fears, desires, likes and dislikes, the avoiding or consummating of which decidedly call for intelligence, but which also involve the crippling or destruction of the individual as a wholesome, well-rounded personality. What is dubiously called, for example, an "inferiority complex", may so mitigate against success that a really talented individual may never realize his potentialities, and yet the individual may also exhibit real and even pronounced intelligence. Still further, intelligence may be exhibited in so narrow and so socially remote and insignificant a field that its development counts for nothing and the individual suffers. But, again, the detailed discussion of these matters must be deferred to a later chapter.

Even in the field of the primitive man and in the field of the animal world, instances abound of much the same thing. The primitive man cannot, by any sensible definition, be called unintelligent, nor can the higher mammals; but much of their behavior is destructive, or at least prohibitive of finer and better results, simply because intelligence is so often in the service of drives, the consummation of which is actually destructive to the organism and its welfare. Intelligence cannot manufacture its own drives; it can serve a good drive well, but it is just as impartially a servant to a poor or a bad one. It is in this sense that all thought is after-thought, namely that it comes after and in the service of a drive and never before it. To be sure, on the basis of the memory of past experience we can and do "determine" to act thus and so, but even in such instances there is first the desire to so act. Thought, intelligence, reason, do not initiate; they obey, well or badly as the case may be, in good or in bad causes.

To be sure, all this is not clear to the naive individual, nor even to the individual who suspects something is wrong and is on the look-out. We all tend to rationalize, that is, to give

"reasons" and linguistic explanations for conduct which, rightly understood, explained in the true sense, is based on whim, desire, conditioning, emotional unrest, hunger and the like. But, as we have said above, all this is a mere preliminary superficial survey of a whole field of behavior which will later need our attention in detail. It is unfortunate that we can only consider, at one moment, one aspect of human behavior, but if we remember this fact we will not be misled by the apparent simplicity of behavior but see each aspect in terms of the others and all in terms of the whole organism.[2]

[3]

Intelligence and Facts. There is another aspect of this situation which is worth considering; the relation between intelligence and facts. Suppose, for example, that a given individual, as is frequently the case, knows many but not all the facts in a given problem or situation, but none the less, after much thinking, talking, experimenting, balancing, reasoning and all that, comes to a conclusion. Shall we say, because the conclusion is wrong, that the individual is therefore lacking in intelligence? If we do that, then probably no person who ever lived has shown intelligence consistently. The great scientists of an earlier age, the great philosophers whose systems are now outlawed, were surely intelligent even in the making of the deductions which time and greater knowledge of facts have shown to be erroneous. Sometimes, indeed, it requires more intelligence to be wrong than to be right! If the present astronomical system is correct, then the previous one was incorrect, unless we call to our aid some dubious system of philosophy which would make all things true when and if we believe them true, but it would be hazardous to assume that the men who framed the previous astronomical principles were lacking in intelligence; indeed, in terms of our remark above, for all their errors they may have had a higher degree of intelligence than is required to come to true conclusions when all the facts are, through the labors of many generations, spread before one. The intellectual dwarf may see further and better than the giant, if the little fellow be on the giant's shoulders.

It may be counter-argued that intelligence is just that ability which gets the facts, but this is after all an evasion. There are many facts about innumerable problems in this present world of ours of which we are completely ignorant, but it can hardly

[2] Woodworth and see, also, references to Chapter IV, Part I. See, especially, for discussion of "instincts" from above point of view, Ritter.

be said that we show no intelligence in handling our problems. We may and do fail to solve many of them just because we do not know the facts, or all of them, but we can use intelligence as far as possible, and with as much success as that degree of intelligence will permit in the light of that degree of knowledge of the facts which we have. Intelligence cannot manufacture or guarantee facts or results any more than drives can guarantee the satisfaction of the needs in question; intelligence, it cannot be too often repeated, is a tool which achieves what it can when it can. And all this is the more worth realizing in view of the very wide-spread, yet fundamentally incorrect public attitude toward intelligence. Intelligence is not a cure-all and a panacea for all our ills. Were the average intelligence or I.Q. raised throughout the country by some 50%, since the distribution on every side of every question would be unaffected, the status would be much the same as it is now. To increase intelligence without changing other things is to bring about no Utopia. Great intelligence can be directed and has been directed toward the manufacture of devices for war; greater intelligence could manufacture even more savage devices; great intelligence may be interested in plans for peace, and a greater intelligence more able to bring about the consummation of such plans, but the intelligence in the one case is in the service of and in terms of interest in war, desire for war, hunger for war, and in the other for peace, and in neither instance does the intelligence decide what is to engage it, but simply endeavors, as a mechanism, to consummate the drive in question.[3]

[4]

Intelligence and Education. Nor is the educated man necessarily the man who is, in every sense, intelligent. Again we meet with mis-conceptions that are part and parcel of the present-day superstition-culture. A man may know many things and yet be of mediocre intelligence; that is, while we saw in the last paragraph that intelligence without facts is handicapped, it is equally true that to have mere facts without intelligence is to be quite as handicapped. Intelligence is the ability to solve a problem, to make an adjustment to a new and baffling situation, an ability to consummate a drive which is not immediately and automatically satisfiable; mere knowledge of facts is not that ability. One may know, one may even be learnèd and have much knowledge at his disposal, and yet be quite unable to use that knowl-

[3] See Robinson, both references, and further readings there listed. See also, the arguments and references of Ch. II above, particularly Section 8, on Language and Learning, where the verbalization aspect is stressed.

edge in the solving of problems or in adjusting to the environment or in satisfying needs. To be sure, this may be doing violence to the better meanings of education, and probably is; but it is none the less true that there are some meanings of the word "education" which are almost synonymous with just learning in the above sense. If, on the other hand, by "educated" we mean "able to act intelligently," then we have another situation, in which there are some other points of interest and value. For it is now almost universally admitted that the ability to think well and straight, i.e., to exhibit intelligent behavior and to solve problems in one domain of knowledge does not guarantee that an individual will be able to do so in another, unless that other is so closely related to the first that it is almost the same or at least possesses many points in common. But this is again to state the relationship between facts and intelligence, and to again assert that there is no such thing as intelligence-in-itself, awaiting the call to service. Intelligence, as we have repeatedly said, is a form of behavior, dependent on structure and the modifications of experience; it is always concrete, for it is always in terms of the symbols, the language, the substitutions which are being used at the moment, and regardless of what far-reaching significance these symbols may have apart from the thinking at the moment, the thinking at any moment is always in terms of just that concrete experience for which the symbols stand. This is another way of saying that one cannot come to have the ability to exhibit intelligent conduct in one sphere by practicing intelligent behavior in another unrelated field. To take a crude analogy, the health, the vitality and the muscular strength which go to make for excellent behavior on the foot-ball field do not automatically form the basis for excellence in swimming. To be sure, there will be so many elements, muscular, visceral and the like, common to both activities, so that he who can do one well will probably do the other passing well also, but a champion in the one is not, without additional practice in the new field, a champion in that also. This crude analogy merely faintly points out the differences between, say, the surpassing mathematician and super-excellent linguist. To be a good mathematician, and to exhibit intelligence in that field of behavior requires habits of using different symbols from those required in the study of languages, and while the individual who excels in one field may and sometimes does do better than the average in many, it is not because of the excellence in the one field but because of knowledge of facts, practice, experience and habituation in many fields. But this is to again raise the question of the meaning, the

significance and the value of so-called intelligence tests, a matter which we have already briefly touched on and to which we will again return in a later paragraph.

Roughly speaking, one might say that education gives the facts with which to think, with which to reason, and which form the basis for intelligent behavior in those fields to which the facts are germane and gives, too, at best and in the happiest systems, something of a technique for using those facts, but mere facts and mere technique, (which is but another fact), will not take the place of intelligence if the basis for that type of behavior is lacking as structure. Education cannot produce intelligence; it can but give opportunity for the development of intelligent behavior in those realms where the basis has also been given in facts; education, at its best, is the environmental stimulus to the native endowment which results, when properly developed, in intelligent behavior. It cannot supply what is lacking in structure here any more than it can in the field of sensation. No amount of training will enable a student to hear whose structure is deficient.[4]

[5]

Character and Intelligence. Much of what we have said in the previous paragraphs and sections of this chapter can be stated from the point of view of what, speaking roughly, we call character. While the words character, individuality, and personality are, necessarily, somewhat vague and open to individual use and significance, it will probably be conceded that character is some rough sum and total of habits, ideals, purposes, attitudes and the like, particularly as seen from the point of view of the social order and the moral judgment. It will probably be agreed that an individual may possess good character and little intelligence and, vice versa, great intelligence and a more or less socially worthless or even undesirable character. This is largely again a matter of drives as contrasted with mechanism, for character, as we have defined it, is to be understood in terms of drives and desires, the expression and inhibitions of hungers, while intelligence is, as we have shown, neutral in this respect, being at the service of good and bad drives impartially. Since character is a matter of drives and their conditioning, it is apparent that more can be done with the shaping of character than with the developing of intelligence. Intelligence is intelligence, and has no varieties except in so far as we wish to call such intelligence as develops with reference to different

[4] See, particularly, Kelley, Bagley, Wiggam, Platt.

things and in different situations an actual different intelligence, which is neither justified nor of any particular value. And even if we admit and grant for the sake of the argument, with the most rigorous adherents of heredity, that we inherit instincts and drives of rather well-developed complexity, even these theorists must admit that training can and does condition the inheritance, so that what was once a main drive may become a very unimportant one to a given individual, and what was once of little force may become of prior importance; in a word, we can mould drives to social patterns, and therefore, indirectly, bring it about that what intelligence the individual develops on the basis of inherited structure will be in the service of socially acceptable impulsive initiations. We can condition a child to fear the Lord and to shun evil, however we define it, and to love cleanliness and honesty, and having thus conditioned and predetermined the channels along which his intelligence will work, we will have done the best we can. This naturally, leads to a consideration of morals and to the question as to whether the feeble-minded and the intelligent differ from one another, simply and solely because of this intellectual difference, in what we call moral conduct.[5]

[6]

Intelligence and Morals. It will be remembered that, in a previous section, we called attention to the fact that some investigators had come to the conclusion that all desirable traits were correlated, that is, that those who were above the average in intelligence, were also above the average in health, strength, stature and weight, in socialization and in morality. We found some concrete evidence for the correlation of physical and mental superiority, as well as for physical and mental inferiority, though we also pointed out that there was probably a circular relationship, whereby the intellectually superior were able to obtain, because they were more intelligent, better food and more of it. But ignoring this aspect of the case, since our immediate interest is in morality and intelligence, it will be remembered that we entered there a question on the subject, which question we will now consider in more detail.

It must always be remembered that by "moral" we mean behavior in terms of habits, attitudes, values, beliefs, practices, which are in conformity with some standard, be it that of a revealed religion, (though morality is not itself religion) or public approval and opinion, or tribal custom and authority, all of

[5] As for Note (3) and Kelley. See also, Platt.

which, of course, are closely related. To act in accord with this mass of authority and tradition is possible for either the intelligent or for those deficient in intelligence. The lack of intelligence, unless it be of such pronounced degree that it makes impossible such necessary perception as lies beneath the moral conduct, is of no fundamental significance. On the other hand, such degree of intelligence as is more than enough to understand what is involved and to perceive what is called for in any moral situation, does not guarantee that such moral conduct will be forthcoming. It was once thought, under the older Lombroso school of criminology, that all criminals were feeble-minded or at least below normal; later observations, plus actual tests, seem to show that this is far from being true. It may be that those of lesser intelligence are more readily detected in their anti-social conduct and that all criminals would not show an actual low average, but this matter of the criminal is slightly apart from the present consideration of morals in general. But it is also certainly true, and on mere inspection of the records, that many criminals and anti-moralists have been and are conspicuously gifted with intelligence, often very far above the average.

As a matter of fact, we do not know the answer to many of these questions; we can speculate, but we have no substantial, well-founded, demonstrable conclusions. We may reason that the intelligent can see the results of their proposed misdemeanors, but so can those of less than average intelligence, and in either case, the mere verbal acknowledgement of the fact that misconduct will result in loss of social esteem or in punishment, as an idea, is not any more provocative of conduct than the ideas of pain and pleasure that we considered in the case of our study of learning and our criticisms of the associationist theories. Ideas of this and that, as ideas, do not motivate or control; they merely represent, to present consciousness, what is what, in terms of words or other substitutions; conduct takes place in terms of drives, habits and conditioning, and the less intelligent can learn as well or as poorly any given set of motor or moral acts as can the more intelligent if opportunity and practice is given, and idiocy and low imbecility ruled out. Certainly, the solution of moral conduct, once we have established a moral code that is worth teaching and worth living, will not be in terms of the teaching of logic and high abstractions; intelligence will not be the factor which will determine the ability of a given individual to learn it, though it will be a factor together with habit which will enable the individual to consummate the drives concerned under the circumstances given.

To be moral is to conform, and intelligence, as such, has no stake in conformity or non-conformity. The radical, while he may be intelligent, is radical in virtue of drives, likes, dislikes, rather than mere intelligence. We can and do talk of intellectual insight into problems of justice, sanity, balance, health, freedom, but it is only when and if there is interest in these things, it is only when these things become desired, become the basis of drives, that they are intellectually sought after, for they become problems for thought to solve. Quite as many extreme conformists have shown high intelligence as have extreme radicals; one could, for the sake of argument, make up a group of 100 radicals, all with an I.Q. far above the average, and match them, one by one, with equally intelligent conformists or even fundamentalists. It's a matter of drives, and the constant insistence on this is the correct answer to the more widely spread belief that it is a matter of intelligence. Morality is essentially action, behavior; and thought, as we have again and again seen, is either a substitute for immediate action, or a technique whereby more complex or more fitting action is made possible, in terms of drives that are not themselves thought.[6]

[7]

The Problem Child. The so-called problem child is a sub-instance of the above. Problem children exist, to be sure, whose difficulties are in the field of intelligence proper, and who fail in school or society because, regardless of their drives, and assuming them to be reasonably properly conditioned, there is insufficient intelligence to consummate them. But such problem children constitute a very small group of the extremely deficient. There are other children, far more numerous, whose intelligence is adequate to consummate drives, but whose drives are, themselves, improperly conditioned. Whether we call them problem children, or neurotics, or peculiar, or potential criminals, or misfits, depends on our attitude and our own knowledge and drives and interests, but it is certainly true that the solution of the problem of such children lies in the field of reconditioning their emotions, drives, attitudes, interests and not at all in the field of intellectual endeavor *par excellence.* The literature of modern education is full of case studies where incorrect drives, curious likes and dislikes, early fears and anxieties, unsatisfied needs and hungers have been the real cause, the real basis, the real conditioned structural explanation of an individual's failure

[6] As for Note (3) and Kelley. See also, as below, Schlapp and Smith, and Seabury.

in school, in social living, in adaptation to the life and customs, interests and ideals, of the group.

Indeed, what sometimes seems to be deficient intelligence may really be, when proper investigation uncovers the facts, improper drives; inhibitions, fears and the like. More than one problem child has been diagnosed as below the average in intelligence when better methods and more adequate investigation have shown the I.Q. to actually be above normal, but the drives so confused, so abnormal, so inhibited, that there was no adequate functioning of the good intelligence. And while we have, on the whole, agreed that good physical condition goes with good intelligence, circumstances do bring about many exceptions, so that some problem children whose intelligence seems deficient, are to be understood in terms of deficient physical condition, deficient diet, disease, sensory disturbances, accidents. Naturally, all this again brings up the question of the measurement of human traits, and since all human traits are exhibited in behavior, it means behavior tests. We cannot, as we have remarked, as yet so correlate structure with behavior that we can, even were the structure directly observable during the life of the organism, deduce the expected behavior from the observed structure. We must measure structure, which after all is the fundamental thing, in terms of its functioning, which leaves much to be desired, but is the best that can, now at least, be done.[7]

[8]

Tests and Measurements. When we discussed the use of scales for the measurement of intelligence and the estimating of what is called the mental age and the relation between them, i.e., the I.Q., we said we would return to the subject for further consideration. There are innumerable points worth considering, though we will here be able to examine only certain fundamental assumptions and deductions and matters of a more or less general and theoretical nature. In the first place, as we have several times pointed out, while intelligence depends on the activity and behavior of structure, we cannot directly examine that structure but only indirectly measure it through the behavior. Secondly, while we do measure behavior which, as intelligent, is adaptive to a problematic situation, we inevitably also measure, at the same time, past experience and past opportunities as reflected in the learning that is applicable to the problematic situation in question. We cannot measure intelligent behavior

[7] See Wallin, Mateer, Sayles and Nudd, Platt; Schlapp and Smith, particularly Bks. II and III; Seabury, particularly Pt. IV.

except in terms of some definite situation which, we assume, will bring forth the behavior that we will call intelligent. And any such situation which we arrange will be, inevitably, partial in some sense, in that the same degree of intelligence as is required to solve the situation in question, and in which a failure is scored, might be manifested in some other situation which is not tested. We are apt to diagnose intelligence or the lack of it in terms of situations which are too narrowly dependent on some particular opportunity for experience in the past of an individual. To be sure, the assumption of such tests as, say, the Terman revision of the Simon-Binet, is that the problems given are such that each and every normal individual in the group will necessarily have been subjected to the proper experiences and have had the opportunities needed, so that if the degree of intelligence is present the solution will follow. That is, it is assumed that special privileges and special opportunities play no part in the score obtained, and that all that is involved in the necessary intelligence to obtain a given score. This is open to at least theoretical dispute.

All this is to say that tests really test attainments and learning quite as much as they do intelligence. To be sure, two individuals with the same opportunities of learning, in some given field, will exhibit very different problem-solving abilities, and this second matter is what the tests are interested in measuring, and which they certainly do measure to some extent and in some way, but exactly how well or to exactly what degree it is not possible to say. This is not offered so much as criticism as warning; without question the present day tests do offer a far better way to determine the abilities of an individual in a given field than do any of the older types of estimate. But perhaps the word we have just used will, if expanded a bit, state the position here taken a bit clearer; tests measure the ability of an individual to cope with a given situation or set or series of situations, which ability in turn is due to a complex of actual experience and learning and a native structural factor which makes possible a given grade of adaptive behavior on the basis of that learning and experience. This means, as has been stated in different terms above, that individuals with what our best observation will call equivalent or nearly identical experience, will behave differently in a common problem-situation because of the native factor of such structure that the experience can be used by one individual to better advantage; or *vice-versa* that a given individual with a less bulky or adequate experience may do as well or even better, because of the native factor, than another individual with more experience but less ability to use it.

This places the whole matter, though not as exactly and as accurately as is desirable, in terms of structure; in terms, that is, of S, R and the bonds between, some of the S's and some of the R's being the product of direct experience, overt and concrete, some of them, and these more fundamentally and definitely the things involved in the intelligence factor, being the result of the reorganization, the re-sorting, the re-shaping of experience in terms of words, phrases, symbols, categories, systems and the like, i.e., intelligent behavior.

It is clear then, that we can never eliminate the effects of experience in any system of measuring intelligence through the measuring of behavior. All tests really measure a complex, and many tests should frankly state, and some of them do, that proficiency in solving the problems they present is not so much diagnostic of intelligence as it is prognostic of success in the line of endeavor which the problems of the test sample.

Still other criticisms of some current practices should be made. It is, for example, very dubious practice to consider a score on one test as in any way connected with the score on another test, unless both tests treat of much the same content and take for granted much the same type of problematic situation. Thus, an I.Q. obtained on the Terman scale should always frankly be called just what it is, namely, an I.Q. on the Terman scale. It represents a ratio between attainment on the scale and the chronological age of the individual who obtains the score, and it is rash to claim that the I.Q. of 180, say, represents an ability that is three times as great as that represented by an I.Q. of 60; 180 may be much more than three times as great, it may not be that much. Nobody knows, for the units of the scale are not directly and demonstrably commensurable and inter-exchangeable, and what zero is, exactly, no one knows. Nor is it at all certain that an I.Q. remains permanent and shows no fluctuations, in spite of some claims in this direction, for it is certainly demonstrable that physical conditions influence mental behavior, and since the I.Q. depends on mental behavior at any moment, it will necessarily, in the final analysis, be dependent on physical condition, glandular activity, dietetic and disease conditions. Unless one clings to the older exploded myth of a mind separate from and independent of the body, one can not claim that mental behavior will continue to flourish even when the physical structure underlying it is below par.

The realization of some of these difficulties has led to several different attempts to solve them. On the one hand, stricter attention has been paid to the make-up of the so-called intelligence

tests in the effort to eliminate at least the more special elements of learning, and to make the tests, so far as is humanly possible, representative of such common and fundamental matters that it might almost be claimed that not to know them would be full proof of lack not merely of intelligence in the stricter sense but even of memory and perception in general. A second course of procedure has been to correlate and compare, to average and sort out, the results of an individual's performance on many different tests, but in the long run both these efforts still share the criticism which we have outlined above. Another method of procedure has been in the direction of endeavoring to more closely understand what is meant by intelligence, to separate, even partially, the results of experience and native structural endowment developed through an individual's experience and, finally, to scrutinize more closely the structure itself, with the hope of seeing more clearly and definitely what structure may be thought of as the basis of intelligent behavior.

A newer and further development of the testing movement is that which concerns itself with the measuring or weighing of traits other than those strictly intellectual, i.e., tests which measure emotional drives and complexes, types of temperament and character, organizations of motor or artistic skill, special talents and defects. And, while these tests are also open to the same criticism as these already discussed, in a sense they are less so, in that they do not really attempt to measure what might be called native drives, but to ascertain what is the present status of any given drive or set of drives, what is now the ability to perform a given act of skill, what are now the stimuli which set off given emotional reactions, what are now the conditions for emotional stability, and what have been the causes, immediately or remotely in the past, for the conditioning which these tests reveal.

As a result of the investigations in terms of these tests, some of the statements we have made in this chapter are fairly well established. Thus, it is clearly shown, on the basis of the comparison of the results of such emotional tests and the more ordinary variety of intellectual tests that success in, say, school work, is as much dependent on drives as intelligence, a conclusion which we stated above in different form. We will be more directly and in more detail concerned with the nature and the results of these findings in the next sub-division of our subject, the study of the abnormal from points of view other than the level of intelligence. This is again to touch on the problem-child, the criminal, the mal-adjusted individual, the neurotic and the

insane, for it is clear to even the most superficial examination that none of these are to be explained in terms merely or perhaps even mostly of intellectual peculiarities. But to these matters we will have to return from another point of view.[8]

[9]

The Training of Intelligence. From all the above, several things emerge. First of all it is clear that to speak of training the intelligence is to use a phrase which may have many different and almost incongruous answers. Secondly, that if by such a phrase we mean the bettering of structure, the raising of the inherited efficiency of the organism with respect to its ability to indulge in mental and substitute behavior, it is to mean something that it is impossible to do. Thirdly, if by the phrase training the intelligence we mean teaching the animal, human or otherwise, mere facts, we are then really evading the issue, for while, as we have seen, intelligence must have facts to work with, merely having the facts does not mean having intelligence. This is aptly shown by comparing the behavior, in a problematic situation of two individuals, each say mentally ten years old on the same scale, but the one individual chronologically ten years old, the other 40 years old, or even merely 20. The individual of chronological age 40 who, by assumption and test results, has no greater mental age than the one actually 10 years old, will none the less act with better adaptation in many situations, simply because of greater knowledge, acquaintanceship with facts, well-formed habits, greater physical strength, better emotional stability, in a word, greater experience. This is, of course, the same point we raised in our discussion under several headings earlier in this chapter.

As in the case of so many other disputed matters, much is involved in the definitions overtly or covertly introduced. As we define, so shall we set about to produce or to encourage the development of what we have defined. But, from the point of view we have developed here, it is clear that the only meaning the phrase "training the intelligence" can have is that it implies the giving of as much opportunity as possible for the learning of such facts as will be needed to properly and adequately solve and adjust to the situations which a given individual is apt to meet with; helping the individual to so sort them out that there will result, as much as possible, adequate and well-founded generalizations, a veritable philosophy of experience, and a set of mental substitutes for actual behavior; and that there will

[8] Terman, and Hollingworth, L. S., both references.

accompany this at least two other things; first, such care of the physical endowment that there will be health and energy, sensory acuity within the limits of heredity and, second, such conditioning of the drives that the native capacity to think will not be checked by improper drives, or diverted into improper channels. All this is easy to say, but to define adequate drives or inadequate channels is not possible, at the moment, with any convincing detail or solidity, though it is apparent, looking at the matter this way, that what will happen to the intellectual endowment or capacity of any given individual is largely dependent on what types of intellectual behavior impress him, interest him, enlist his drives and result in habits, and all at perhaps an early age. This is the same old question of heredity and environment, and we had best leave it here to investigate further when we consider emotional abnormalities.

[10]

The Humanizing of Knowledge. This phrase, with its happy and optimistic implications and assumptions has had much popularity recently, and deservedly. To be sure, many people take it too simply, too uncritically, too unpsychologically, too unbehavioristically, though if it is seen in the light of the contemporary discoveries in biology and psychology, it might well be taken as a slogan for our civilization. For the phrase implies that the human being is human, that he is not merely intellectual or even primarily so, and that knowledge, as knowledge, unless it be in relation to drives which when consummated, result in a better status than before, is useless; and that only such knowledge as directly involves human welfare is really worth while. To humanize knowledge is to put it at the service of human needs and human hungers, always with an eye on the co-ordination of drives, the social nature of human beings and the balance of the individual personality. Mere knowledge, except it be in terms of human needs, is useless knowledge; but this again leads perilously close to metaphysical fundamentals.

Robinson, in his *"Humanizing of Knowledge,"* particularly in his closing chapter on the Democratization of Science has stated more clearly and more emphatically than any one else this imperative need of modern science. We most emphatically do not live in terms of knowledge as knowledge but in terms of knowledge as a basis for the consummation and the co-ordination of drives, needs, hungers and purposes. In so far as science tells us the facts of the universe it tells us less than half the story; what we need is still other facts, i.e., the meaning of those facts

for our welfare, for our progress, for our success, our happiness, our balance. This, of course, contradicts the avowed purpose of those who are proud to call themselves 'pure' scientists and who disclaim, with heat, any practical purpose in the efforts they make to enlarge our verbal and scientific understanding of the facts of nature. But in the discussion, as is so often true, there is hidden the usual verbal misunderstanding and the inevitable tendency to use words with some sort of personal and peculiar reference. It is most emphatically true that the scientist in his research is not, always and everywhere, immediately and consciously concerned with the significance of his findings for the amelioration of human problems. He is often above and aloof and impersonal in his pursuit of knowledge and even denies that he is himself driven by the very drives which activate and impel his unlearned and unscholarly representative in the street. It is not meant that each and every scientific expedition whether into the wilds of the Polar regions or the intricacies of the atom be consciously and immediately in terms of a desire to improve social and adjustive conditions of human behavior. But it is emphatically meant that unless such knowledge as is obtained in this so-called pure search and research does ultimately so function it is not worth the finding.

It may be a long time before the knowledge so purely found may find its application; this is granted and not objected to. But that it must at last find its applications is insisted upon, for both in the race and in the individual intelligence and its product, knowledge, are in the service, as mechanisms, of the more fundamental drives and needs of the organism. Whatever we come to know can only mean, in any worth while sense, that we will the more easily find our food, achieve our safety, satisfy our needs for love and build a secure home in the environment we call life. Greater knowledge of facts, if and when seen with reference to their human meaning and significance, but means we will do all this with greater ease, greater surety and greater co-ordination. That the sun is some 93,000,000 miles away, that we go round it instead of its going round us, that there are some 90 elements, that the Battle of Hastings was an event of the year 1066, that the population of this globe is some 1600 million, that there are or are not such things as races, that civilization did or did not start here rather than there, all such facts, as facts, have but a verbal bearing on other verbalizations unless in terms of such knowledge we can construct a better environment for the better and surer functioning of what we call human beings, an environment in which there will be more security and happiness,

less pain and misery. Our systems of philosophy, our framings of religions, our systems of æsthetics, our legal and penal codes, each and every system of thought, no matter how verbally profound, how difficult of understanding, how dependent on the genius of its creator, has no use or value apart from its final practical meaning in the problem of human adjustment. This is, in brief, a preliminary statement of the main considerations of Part IV below, where the details of such systems of adjustment will be considered. It will be remembered that we modified, in the interests of synthesis, the more usual behavioristic definition of psychology and called it the science of human personality adjustment. The further justification of this position will be given as we proceed further through the topics of the remainder of this book.[9]

[11]

Summary. As has been frankly stated several times in this chapter, and implied in many more places, much of the material with which the chapter deals is speculative. We simply do not know the answer to much of it. Sometimes we do not know the facts, as in the case of the fundamental matter of the nature of the structural bases of intelligence; sometimes we do not know the implications or meanings, as in the case of the results of the tests; sometimes we do not know the relationship of other facts, as in the case of the supposed correlation of intelligence and other traits. Nor can we put much of this chapter in terms of S——R.

This does not mean that time and further investigation and new discoveries will change or deny all the tentative conclusions of the chapter; it certainly does not mean, on the other hand, that they will all be substantiated. It means that this is the present status of the subject, that these are some of the main problems, main apparent tentative conclusions, and that greater knowledge and greater or longer applied intelligence will ultimately make something surer out of them. They are all important matters but all, also, complex, requiring much more in the way of detail before they, as major propositions, will have any sound and demonstrable basis. And they are important, not merely as basic matters of psychological science and theory, but as the basis for concrete, practical art, particularly that of teaching, in which field, to be sure, much if not most of the material

[9] See, in particular, Robinson. See also Ritter, Seabury, Schlapp and Smith, Wiggam, Platt as anticipatory of later discussions.

we have discussed is used as a basis for classroom and pedagogical procedure.

This is not, perhaps, as unfortunate as it might at first sight seem, since the very use, in concrete surroundings and with actual rather than imaginary or ideal individuals, will tend to sort out the truth from the errors. The school is, in every sense, one of the greatest laboratories of the psychologist, though it is not always seen as that, for in it the problems of heredity and environment are daily worked out, the conflict of drives and knowledge clearly illustrated, and the results of learning, and the conditions of learning subject to observation on a large scale.[10]

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[10] Confer, again, the discussions and references in Ch. II above, particularly those of Section 8 on Language and Learning.

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"I agree with you in thinking that new definitions of terms are not always necessary to get at the truth; and that the most exact definitions are not so much the causes as the consequences from our advances in knowledge. At the same time, I should say, that in regard to this latter position, they act and react upon each other, and without some understanding as to the meaning of words used, the advance in knowledge would be quite slow, though it still might be quite true that you would not arrive at the very best definitions, till a very great progress had been made."

WHEWELL

CHAPTER I

THE CONCEPT OF PERSONALITY

1. What Personality Means. 2. Disposition and Character. 3. The Meaning of Temperament. 4. The Foundations in Structure. 5. Mental and Physical Aspects of Personality. 6. The Theory of Emergent Evolution. 7. The General Theory of Freud. 8. The Inheritance Theory of Jung. 9. The "Will-to-Power" of Adler. 10. The Structural Approach of Kempf. 11. The Integration Attitude of Janet. 12. Summary. Bibliography.

[1]

What Personality Means. We have repeatedly insisted that a formula or shorthand expression of a proper behaviorism, one which aims to represent not merely the facts of science but also the complexities of human behavior (and which we have expressed as S——R) should emphasize the relationship of all behavior to structure quite as much as to stimulus or to situation. We have examined, in recent chapters, the nature and abnormalities of intelligence, and the structural bases for that behavior which exhibits it so far as the present knowledge of facts will enable us to do so. And we there emphasized the fact that intelligence or intelligent behavior is but one aspect of human behavior as seen in its totality, and even then is but a tool, a mechanism, a means whereby the drives may be consummated and the adjustment of the animal made in terms of its fundamental and inevitable needs.

In still earlier chapters, in Part I, we discussed the drives themselves, their nature, their conditioning and their significance. Both the subject of drives as well as that of intelligence was treated, in a sense, analytically; that is, we were concerned with ascertaining what part each, as such, (somewhat artificially isolated from its proper setting) played in the total behavior of the organism. We shall now, without ceasing altogether from being analytical, begin to survey larger aspects of conduct and to see how different types of reaction, each capable of analysis as such, are seen more adequately when viewed as parts of a whole, as adjustments of a personality. Our discussion, then, of personality, will begin to put together some of the things we have taken apart, though again it must be frankly admitted that the claims of some exponents of the psychology of personality are most certainly greatly exaggerated. There are many things

we do not know about personality, however defined; there is much we can only speculate about. But, here as elsewhere, we will be more interested in a technique, an approach, a way of beginning to get the proper knowledge than in an attempt to solve, at once, the elusive and detailed problems of the subject.

There are many terms used in discussions of the subject of this chapter and, as usual, they have a certain looseness and a very wide over-lapping, due in part to the fact that current speech and the all too-ubiquitous popular psychologizing of the man in the street make such frequent and uncritical use of the terms. While we have no particular right to insist that the meaning we shall give to each of them is the best or most correct or the only proper meaning, we must necessarily point out the sense in which they will be used here, and for our purposes restrict the meanings to just what is indicated. And, certainly, until psychology obtains a specific and exact nomenclature, it cannot be taken for granted that such words as are used both within and without the domains of the science, will be used everywhere with the same intension and extension.

Personality, in the present use of the word, must be thought of as a term indicating a synthesis, a sum total which is more than an addition; an integrated whole, a working organization, composed, to be sure, of many subordinate elements. It is the most inclusive term we can use with reference to either human structure or human behavior; and while it is essentially, or properly, a behavioristic term, having a certain dynamic color and significance, it is also a structural term, in that it comprehends all the complex structures which underlie and make possible the behavior in question. In this sense, it naturally follows that personality, as a synthetic term, includes all that has been inherited, either persisting as relatively unmodified structure or as the conditioned bases for present drives and mechanism, and also all the complex modifications which are the basis for mature habits, simple or complex including, of course, intelligence and learning. In a word, personality is an all-inclusive term for all that a human being has, is or can do, feel, think, or wish; the word has its receptorial, connective and motor aspects; it includes unconditioned and conditioned behavior, alike.[1]

[1] Allport, Chs. V and VI; Adler, *Understanding Human Nature,* Bk. II; Jung *Psychological Types,* in general, as well as Roback, for historical background and review of various systems and schemes of classification and treatment. Freud, in general, and particularly *Totem and Tabu,* and *Group Psychology;* Kempf, *Autonomic Functions,* particularly Parts III and IV; Watson, *Behaviorism,* Ch. XII, *Psychology,* Ch. X; Gordon, *Personality,* Ch. I, *The Neurotic Personality,* Ch. I; Berman, Chs. I, IX, and X.

[2]

Disposition and Character. If we wish to emphasize either the inherited or the acquired modifications of the inherited structure, we may use, with somewhat different emphases, the words "character," "disposition," and "temperament" where the first two emphasize environmental factors and acquisitions, and the latter a native element. In emphasizing the environmental changes wrought on the basis of heredity, "disposition" is perhaps the larger word, "character" having, on the whole, a narrower meaning, one depending more on the immediate social-moral situation. Both character and disposition, however, have their bases in heredity in the sense we have frequently pointed out that while they are not native traits, as such, they are based on the modification and conditioning of native endowments. This reciprocal action and reaction of environment and heredity must be constantly kept in mind; while each is a distinct thing, neither has any significance except with reference to the other, though from a practical and applied point of view and technique, same traits are better thought of as environmental and others as native. It is, naturally, particularly difficult to make a sharp and clear distinction in the particular field we are now concerned with. Disposition and character, then, while the product of experience and environmental influences, are such on the basis of inherited structure, so that it is fair to expect that certain dispositions and characters could not develop on certain hereditary bases, while certain hereditary bases almost require certain broad character and disposition results.

By disposition, specifically, we mean the results of experience working on heredity, as contrasted with unmodified traits that more nearly represent pure inheritance. We speak of a gloomy or a cheerful, a willing or a surly disposition, and while we certainly cannot, in any decent sense, now point out what structures and what experiences have gone to bring about such characteristic behavior, such dispositions or shapings of behavior, this does not necessarily mean that we are merely splitting hairs or indulging in verbal gymnastics. There is a real distinction between the things in question and while we should not run into the errors and the absurdities of many popular and speculative writings on the subject, it would be equally absurd and erroneous to dismiss the whole matter as unworthy of thought or insoluble in fact. It has been frankly acknowledged that we know little and can clearly demonstrate less in this field, but once we have laid out what might be thought of as a general survey of the

terminology, and begin to deal with concrete elements, we will see that there is some evidence for our generalizations.

Disposition, as we have said, is developed on the basis of heredity and is what the individual comes to be in terms of experience working on endowment, and while character has much the same significance, disposition has more of the emotional emphasis and coloring (though it is not merely that), while character has a motor and social emphasis. Where our disposition is shown by emotional reactions in the main, character is designated by more overt and more definite behavior, acts, words, plans, decisions, and the like. To be sure, these things overlap, and one's disposition certainly in part determines what one's acts will be, which is merely another way of saying that a response is a response of the organism as a whole, a point we have constantly emphasized. Still further, where disposition is more nearly constant in different situations, character is more open to shifts; we show or act different characters in different environmental situations. Again we tend to be more personal in our estimations of disposition, liking or disliking it, reacting to it in terms of our own disposition and acquired conditionings, whereas we tend to evaluate character more in terms of pseudo-objective social and moral standards. As we have said, disposition is more or less constant, at least over large periods of time and under all but very exceptional circumstances, being a sort of generalized form of emotional attitude toward experience as a whole, while character more often shifts and shades, more or less matching the demands of the moment in terms of some core of more or less substantial habits, ideals and beliefs. We often show a different character under different circumstances, whether to elders or inferiors, to authority or on request yet, as said, with something of a core of general nature. It has already been acknowledged that there is no exact or universal use of these words, and hence in the literature referred to other shadings of meaning will be found. It is sufficient for our purpose, however, to have pointed out the different personality components; the nomenclature, for the moment, is not of paramount importance.[2]

[3]

The Meaning of Temperament. As contrasted with character and disposition, by temperament we mean something more closely related to hereditary, to unconditioned structure, to sets and types

[2] As above for Note (1), particularly, Gordon, *Personality;* Adler, *Understanding Human Nature;* Allport, Watson, *Psychology;* Hinkle, McDougall.

of reaction which, while they have necessarily had to develop in terms of experience, represent not so much changes in structure as development or maturity of that structure. Thus, again using more or less popular terms, we recognize an impulsive type, a phlegmatic, a melancholic, a retiring, a slow, a quick, and many other varieties. There seems to be some reason to believe that these types, or temperaments, while experience, of course, develops and shapes them, more nearly represent native trends than do the dispositions we have discussed above. It is futile and perhaps even foolish, in the present status of knowledge of the subject and of research on the structures underlying all these matters, to indulge in particulars. Certainly, while the historically famous four types or humors, the sanguine, the melancholic, the choleric and the phlegmatic, do roughly show themselves in a survey of human beings, the classification is too theoretical, too speculative, too sharp, and too unrelated to demonstrable functional and structural facts to be anything but a convenience in a rough and ready sense. But, as we have said, the literature on the subject with rare exceptions, deals in just this type of nomenclature and supposition, fitting what facts to theory are convenient, ignoring or distorting the rest, and being apparently content to let it go simply on the basis of such a classification and to seek no further.

On the other hand, it is certainly true that, in actual practice, psychology deals in the main with individuals who, prior to inspection, have already developed a disposition, have several characteristic sets of responses suited to different situations, are roughly of one or another temperamental slant, so that unless psychology can, in one way or another, develop a technique to handle the factors involved, we will have to acknowledge that psychology, to just that extent, is inadequate to deal with the higher levels of human behavior. Psychology, apart from textbooks, does not deal with drives as such, with mechanisms, with thinking or with emotion, with habit or with impulse, but deals with human beings, integrated organisms in complex situations where these very factors of character, disposition and temperament are paramount. The whole field of applied psychology, whether it be in the sub-fields of business or advertising, salesmanship or teaching, vocational diagnosis or psychoanalysis, religious conversion or aesthetic preference, marriage or neuroses, deals necessarily and emphatically with the whole human being, and the terms we have been endeavoring to roughly define are but verbal devices that endeavor, through analysis, to make it possible to understand the integrated human personality and its

behavior preferences and peculiarities. Modern psychology, simply because it is modern and has outgrown the purely static, atomistic attitudes of the earlier speculative analyses, deals ultimately with integrations; temperament, character and disposition are examples of such partial integrations, the "atoms" of a still larger integration—personality. To be sure it is easy to slide from an atomism that is in disrepute to a generalization that is equally unstable and useless, which in some uncritical quarters is perhaps the trend, though the general situation shows a healthy attempt to be analytically rigorous and yet to deal with the complexities of the whole organism and the highest integrations of behavior. However much we wish to stress, in any behavior the predominant rôle of some habit, some emotional conditioning, some intellectual setting, some dispositional or temperamental trait, it is none the less true that we are always and everywhere primarily interested in the behavior of an organism as a whole, and it is merely convenience or ignorance or the weakness of our theoretical or practical technique which cause us to describe conduct analytically, in terms of the simpler elements. But to this general subject we will return later, both in our discussion of "emergence" and in the treatment of types of personality.[3]

[4]

Foundations in Structure. It is when we endeavor to relate the meanings we have given to the terms discussed above to actual structure, or even to supposed structure, that we see the difficulties all too clearly. We can speculate, we can even sometimes correlate, but we cannot always clearly prove and experimentally demonstrate; and this not merely because of the complexity of the subject, but also because we have no control over events prospectively or retrospectively. We cannot, that is, undo the results of a given experience and then observe those of an alternative conditioning situation, as can be done in the field of physics or chemistry for example—a defect involved, as we have pointed out, in the technique of all the social science. But, allowing for these and other difficulties, it is apparent that, on the basis of the above distinctions between what we have called the native aspects of personality, i.e., temperament, as contrasted with those more specifically due to environmental forces and conditionings, such as character and disposition, we would expect an investigation of the structural bases of personality to divide itself into two problems, one seeking for the more or less native structural bases of temperament, the other for the conditioning and modify-

[3] As for Note (1) above, and Note (6) below.

ing causes of disposition and character. And, again as might be expected, the search for temperamental bases has been more physiological, that for characterological and dispositional traits more psychological; the one looking for causes in metabolic peculiarities, ductless gland traits, and the other in conditionings and habituating effects of teaching and experience.

It is probably true that, in the long run, when present speculation has been replaced by more adequate and better grounded knowledge, we will find the seat of temperament in or in connection with the ductless glands. This statement must not, however, be taken in too narrow a sense, for the ductless glands are what they are and do what they do in terms of their relationships to the other organs of the body, and are not, in any sense, independent initiators or uncaused causes of anything. Any complicated machine, with highly differentiated parts, may be analyzed as regards its activity from many angles and points of view, but any point of view which sees the machine as incarnate in one isolated and independent portion does violence to the facts. The ductless glands are, as we have seen in an earlier chapter, not only effectors, but also offer, through their chemical and catalytic activity, a stimulus and drive to further activity. They are, as we have seen, closely related to impulsive and emotional behavior, and can be, like any other structure, conditioned to given stimuli under proper conditions.

On the other hand, it is certainly going ahead of the facts as known at present to name temperaments in terms of the separate glands. While there may be a certain amount of what might be called metaphoric approximation in calling one individual an adrenal type, and another a thyroidal, and a third a pituitary, such metaphors fail to take account of other and equally important structural matters. But, for all this, it is fair to say, as matters now stand, that an individual with deficient thyroid will exhibit a very different temperament from another individual with a thyroid that is over-active; that an individual whose adrenals are excessively active will display a temperamental picture very different from one whose pituitary is relatively the most active of the whole group of glands; that one in whom the thymus has persisted as an active metabolic agent beyond the normal period will present peculiarities of temperament due to that persistance; that an individual whose sex glands have not matured at the proper time will exhibit wide temperamental divergences. It is also certain that experimental dosing of an individual with glandular extracts, particularly thyroid, does produce changes in behavior that are properly called (ignoring

the experimental and therefore environmental side), temperamental. There is no change in knowledge, in habits, in physical strength, unless after long duration of the experimentation, but there is a change observable after even a relatively short time in emotional attitudes, interest, energy output; the whole giving the effect of a new temperamental attitude. The difficulty is, in the present status of knowledge, to avoid premature conclusions and exaggerations of the facts. While it should at present be admitted that the glands are at least a partial basis of the temperamental aspect of personality, this should never be construed to mean that the glands are the sole basis. We do not yet know what other factors are involved.

From the point of view of character and disposition, we can more easily see the processes involved; that is, assuming the temperamental basis, there is nothing new, nothing different from standard conditioning in the formation of dispositions and characters on the temperamental basis. It is simply a question of seeing how certain actual conditions can be brought about, how character traits and dispositional attitudes can be explained in terms of experience, and the structural and temperamental basis which precedes it. This will again be our concern in our discussion of actual disturbances of personality where, while we cannot say much about the original nature of the individual, we will be able to examine the experience side of the personality and the individual's integrated behavior.[4]

[5]

Mental and Physical Aspects. Coming back to a discussion of the term personality, which we have defined as the whole-organism-in-action, comprising equally the temperamental or inherited structures and bases plus the acquired conditionings, called disposition and character, it is clear that the term comprises a wealth of behavior which no other does. From the point of view of this term, we survey not only drives, but mechanisms; not merely mental but physical behavior; not merely the conditionings of the central nervous system and the effectors associated with it, but also the conditionings and activities of the autonomic and the visceral effectors. So, following for the moment a more or less popular division of behavior into mental, physical and emotional, it is clear that an estimate of an individual's personality involves an estimate of physical condition, both structurally and dynamically, his intelligence, and the settings and patterns of

[4] Particularly, Kempf, *Autonomic Functions,* throughout; Berman, particularly Chs. IX, XI; Kretschmer; Roback; Adler, *Neurotic Constitution,* and *Organ Inferiority;* Hinkle.

his drives and emotional reactions. Contrary to some popular beliefs, personality is not something above, beyond or in addition to, or which informs and vitalizes the organism; it is, *par excellence,* a term which covers the activity of the organism, in any and all situations, as an integrated psycho-physical unit.

From this point of view, personalities may be abnormal, (i.e., may depart from the average or normal), with respect to any of the factors we have listed or with reference to all, and may also, of course, deviate above or below the normal, or may, as in many instances, vary in these deviations, now being above, now below. Thus, the deficiencies and superiorities of intellect we have discussed are, properly speaking, personality traits, and the various defects or excellencies of character or disposition or temperament are, also, in the more inclusive sense, defects or excellencies of personality. It remains to be investigated, from several new points of view, whether the claims that a personality excellent in one direction will also be excellent in another are warranted, which is but a different way of stating the theory we discussed in a recent chapter, namely, that intelligence goes with health, strength, happiness, moral conduct and emotional balance, and if this is not so, to account for the contrasts. It is evident even on purely empirical grounds that some personalities with mental defects have excellent emotional balance, and some with excellent intellectual behavior, at least under test conditions, have poor emotional balance,—examples of the many contrasts which, in actual fact and apart from theory, exist. But to this, as well as to several other matters recently mentioned, we will make a new approach later.

But one other matter remains to be considered here, one which was more or less dogmatically and technologically assumed, above, namely, that personality, in any and all of its manifestations is but the reflection of structure, of the organism as a whole in action and reaction, and that no elements other than these enter into any personality trait or expression. This is, of course, but a statement in slightly different words of the fundamental principles of any psychology which aims to be or is scientific and objective, and means that psychology, in its treatment of personality equally with its treatment of reflexes or habits, is frankly materialistic in the same sense that the physical sciences are, and that determinism is rigidly held to, no supernatural uncalculated or incalculable elements entering into any situation. Particularly violent is the opposition to all this on the basis of what are vaguely called "spiritual" qualities of the personality; it is somehow felt that there are some qualities,

some traits at least of some personalities, which cannot be accounted for in terms of the activity of any physical structure. Nor is this an unimportant point which can be summarily dismissed as mere superstition; it is too wide-spread, too highly charged with emotion, too much shared in even by some psychologists to be ignored. And it is worth once more mentioning, if there be any such traits, spiritual or what not, which by definition or assumption are not based on structure, the admission of even the smallest and seemingly most unimportant of these, will inevitably and completely negative the whole field of the science, for determinism to be true determinism must be completely so. The whole argument, it would seem, depends rather on misunderstanding and confusion of terms than on anything else, but we had best examine some of the reasoning involved.[5]

[6]

The Theory of Emergence. The so-called theory or doctrine of "emergence" is noted here because it is, avowedly and deliberately, a criticism of the deterministic and materialistic point of view which is the basis of psychology as we are developing it here and yet, at the same time, curiously enough, a defence of these very things. The whole argument illustrates nicely what we have several times remarked, i.e., that differences of opinion are often emotional in their origin and basis and, secondly, that verbal definitions and discussions are notoriously confusing and conflicting.

The advocates of the "emergent" point of view are at first sight apparently decidedly hostile to any attempt to explain the complex in terms of the simple, the new in terms of the old or, to reduce the argument to psychological matters, personality in terms of structural conditionings, however complex and prolonged. They do not, to be sure, claim that anything is actually inserted or freely, causelessly added during the development of personality, but they none the less will not seem to agree, without further verbal rephrasings in terms of their own attitudes, that personality is the product of the simpler elements of structure and experience. Analogies are frequently used; for example, water, in terms of chemical symbols, is H_2O, but the emergents claim that no one would ever know or be able to predict what the properties of water would be from however detailed and however prolonged an acquaintance with both H and O as mere separate items of experience. Secondly, it is claimed that know-

[5] As for Note (1) and Note (4). See also Herrick and Bagley as previously referred to.

ing the properties of H and O does not, in any sense enable us to "explain" the properties of water, a chemical combination of the two. Something has "emerged"; something new, not in either of the substances, has appeared. They do not say, has been "created," but sometimes the language reads almost as if this term was intended. Almost certainly part of the difficulty lies in what we mean by the word "explain" and what it implies.

But it does seem as if all this is mere words, and even though it may be claimed that the whole argument is not worth paying attention to and that to call qualities "emergent" is to add nothing new as regards facts and explanations (all of which is heartily granted here), it is still true that the theory involved is important from the point of view of the behavioristic treatment of personality. Argument cannot be ignored, even though it is emotionally based on the fear of the loss of values. The distinction between what we called philosophy as contrasted with psychology, of speculation as contrasted with science, of wishful thinking as contrasted with thinking in terms of facts, all of which we discussed in the opening chapter of this book, must again be brought to mind. To "explain" is not necessarily to do away with problems; there are always problems behind problems however good an explanation is, and it may be that the human mind will never be able to answer even half the questions it can raise. But many of these questions are so purely verbal, so evidently based on emotional difficulties, so clearly in terms of fears, hopes and wishes, that they need not be given the same attention that problems based on actual objective difficulties should be given.

But, to come back to the H_2O analogy; while it is, perhaps, true that one could not predict what water would be as regards its behavior from a knowledge, however complete, of its component parts, none the less the analogy, like all analogies, smacks of artificialities and also assumes what remains to be proven. But, passing over that aspect, and considering the second, that of "emergence," it is precisely what "emerges" which is the issue that these critics refuse to acknowledge. Grant all they claim, but no more, and it is still true that water is what it is because H and O are what they are. It cannot be claimed, and the emergents do not openly claim, that some other things than the H or the O are added in the process of making H_2O; something "emerges," they say, but this is really, after all, to say that the combination presents new traits that are due to the co-ordinations and combinations of the traits of each element. One may call the thing emergence, even creation, if you will,

provided it is clearly understood, frankly acknowledged, that the "created" results are due to and based on the recombinations of the elements entering into the situation, indeed, actually are the original traits in a new relationship. New relationships of form, size, color and all that are new, but are also in terms of the factors involved. The doctrine of determinism is the real issue, and if emergence does not attempt to deny this, one can allow almost any linguistic expression of the facts.

As has been stated, it is in the realm of personality that this idea of emergence has been particularly outspoken, though other "crucial" points in evolutionary theory have also been criticised in terms of this point of view. But, particularly as regards what are vaguely called "spiritual" aspects of personality, the emergents have been bitter in their criticism of the S——R formula and the general bases of behavioristic, objective, cause-and-effect, scientific psychology. Again the trouble is a matter of definition; if one asks an adherent of the doctrine to define what is meant by "spiritual" values or traits of a personality he becomes vague; if, however, he succeeds in saying rather definitely what he means by such traits, he then becomes vague in his attempt to show how "emergence," as an explanation of their nature, adds anything to the more straightforward and simpler deterministic point of view. Suppose, for example, we call a "sense of humor," a "feeling of obligation of duty," "ideals of good citizenship," "love of God," "devotion to one's country," "belief in the value and efficacy of prayer" and similar traits, spiritual. If these are spiritual traits, the question then is, can they be accounted for in terms of nature and nurture, inheritance and experience, or must some other explanation be found for them? The emergents claim that they are quite unlike the simpler things from which the behaviorists claim they were developed, and this is gladly granted, even insisted upon, provided it is not also claimed that something over and above the elements and their possibilities of recombination and reconditioning is not posited. If by "emergence" we mean we are, as yet, so ignorant of basic facts and the laws of man and nature that we cannot predict or control, this too is granted, provided it is not assumed that we never will be able to do better!

It is granted by the behaviorist that not all individuals develop all these traits; it might even be granted that some individuals could not develop them at all; but it is insisted that they are the product, the result, the "emergent" if you will (provided determinism is not negatived by this word), of the play of inheritance and environment, native traits and experience. To be

sure, they are complicated traits, i.e., not simple habits, and involve probably much and highly complicated experience, embracing the emotional, the mental and the physical but, however complicated, they are, none the less, like all others, the product of experience working on heredity. One may, theoretically, speak of highly complex "engrams," of extraordinarily integrated "Gestalts," of this or that hypothetical basis, but unless one does adhere to the deterministic point of view and consider all conduct, simple or complex, spiritual or intellectual, as the behavior of structure in action (which structure is now what it is because of the effects of experience on earlier and different structure), there can be no science of psychology and anything is what you wish to believe it to be.

All this discussion is, inevitably, mere verbal treatment, in terms of hypotheses, of the nature, the origin and development, of personality and, of itself, proves nothing, merely offering alternative hypotheses for investigation. It remains to endeavor to see, in more concrete terms, how personality develops, what affects structure so as to produce disposition, how temperament is altered; how, in sum and substance, personality is built up. In an attempt to do all this, we will meet with many theoretical and hypothetical explanations, some of them worthy of at least partial acceptance, some of them not worth any at all. It cannot be too strongly insisted that personality, as a psychological topic, must be treated, at present, mainly from a critical point of view; we do not know any too much about the facts, though several theories now current, if taken in a sane and critical way, have much to suggest as to future possibilities of knowledge.

There is, however, another aspect of the emergent evolution theory or emphasis, that found particularly in the brief summary of Wheeler, which is worth noting, both as excellent thinking and as directly in line with the avowed attitude of this book. In the first place, it is quite apparent (to anticipate later arguments), that desires and wishes, the needs and the requirements of personality adjustment, have a great deal to do with the beliefs we formulate. And beliefs are, fundamentally, an "as if" attitude in both verbal and motor and emotional form, whether such beliefs are scientific theories or magical or superstitious trivialities. In short, we may rationalize and believe in terms of desire quite as easily in the field of science as in that of religion or in the problems that concern a paranoid or hysterical personality. This being so, it is clear that theories in science should always be held tentatively as a technical device,

and until the suspected but yet to be found evidence is forthcoming, should be held open to change and modification.

In so far as emergent evolution counsels an attitude of open-mindedness, a conspicuous avoidance of dogmatism, a willingness to concede the possibility of new and even contradictory evidence, and a complete lack of self-sufficient rationalization, it is worth while not merely listening to but following as a type of attitude. It may be that such antitheses as we have often pointed out,—those, namely, designated by such opposing terms as naturalistic versus supernaturalistic, materialistic versus spiritualistic, mechanistic versus vitalistic, determinism versus freedom are, in part, due to the exigencies and peculiarities of language which is always and everywhere analytical and separative. Nature does not perhaps contain the antagonisms that language shows, and it may be that some of the apparently insoluble "either—or" antitheses are only ultimately soluble in terms of deeper and wider experience. But it has constantly been emphasized in this text that such assumptions as we have deliberately taken have been methodological devices and that in no sense are they dogmatically assumed to be here and now, then and there, under any and all conditions the truth, the whole truth and nothing but the truth. They are emphatically to be thought of as the apparently best present devices to sort out the phenomena of human behavior, and if and when new sorting devices are necessary, nothing that has been done in terms of the first assumptions should interfere with the taking of a new and better point of view.[6]

[7]

The General Theory of Freud. In discussing the contributions to the study of personality made by Freud, Jung, Adler, Kempf and Janet, as some typical instances, we will necessarily touch somewhat on the associated fields of abnormalities of personality and of psychoanalysis, and raise, for examination, many questions discussion of which will have to be deferred to later chapters. With this understanding, then, that some of the terms and conceptions employed in these investigations will not be critically examined immediately, we will now survey some of their contributions.

In the first place, and apart from later criticisms, it must be frankly acknowledged that Freud has taken a more dynamic approach and given a more realistic and purposive and inte-

[6] See Morgan, throughout; Noble, throughout, but particularly Pts. II to IV; see also Bergson for more philosophical point of view; and especially Wheeler for excellent summary treatment.

grated treatment of personality than many of his critics in their more static and analytic treatments. He divided the personality, broadly speaking, into the two aspects we have already discussed; the inherited, and the acquired based on the former, though he tends to make the inherited drive aspect rather narrow, and a bit too definite, in that he specifies two distinct "instinct" impulses, Ego and Sex, the latter of which, particularly, is open to criticism and mis-interpretation. All that is not ego is sex, and vice versa, so that, while he has disposed of the long and imposing list of classical instincts, he has created two others perhaps equally dubious, for certainly it is not proven and is, on the contrary, very dubious, if there is either a self-preservative or sex drive as such. Modern analysis would make of each of these a complex, a habit system, based on original reflexes and shaped largely through experience, as we have seen in an earlier chapter.

As a further assumption, he posits two general "sets" or tendencies, one called the "Pleasure Principle," the other the "Reality Principle," by virtue of the first of which, the individual tends to gratify needs dependent on the condition of the organism and, due to the second, tends to obey the dictates of the group in which he lives. Thus, from birth to death, there is conflict between what the inherited structures "desire" and strive for and what experience teaches is permissible, possible, probable. And, still further, every individual must find a solution of this conflict, one that is pragmatic and workable, or stresses and strains will produce distortions of personality. The abnormal personality, then, is one which has not solved, in decent terms, this conflict between individual desire and social control. Particularly true it is that the conflict in the field of sex is hard, long and difficult to solve, and it is hence Freud's contention that most personality abnormalities are due to difficulties in this field, a point much debated by opponents and certainly open to easy criticism. Lately, Freud has somewhat modified this extreme point of view, but we will have to postpone further discussion of it to a later topic.

Freud further contends that the conflict between inherited trends and environmental curbings is inevitable, and that each individual therefore has the same problem to face, namely, how to build a personality which will at once be what is individually wanted and yet satisfactory to law and order, society and authority. When conflict becomes too great, various devices for "solving" the problem are resorted to; repression being a sort of general device, and involving the more or less deliberate and

conscious determination to avoid thinking about the difficulty, a separating of the conflicting aspects of a situation, a refusal to face the facts, a creating of a belief attitude. This repression may be, if the individual happens to be in an environment that will permit life to take place in terms of evasion, more or less successful; but if the environment itself constantly forces the attention anew on the repressed and deliberately ignored factors, and the matter is really an important one, then such personality disturbances as we call the neuroses are the result.

All this is, of course, highly speculative, metaphorical, even anthropomorphic; but our interest at present is expository, not critical, so we will continue to speak in terms of Freud's own concepts. The repression which we have been discussing takes place partly in terms of another personality factor, the so-called "censor," a device or power or trait or what-not which keeps the repressed material and attitudes from entering into complete consciousness, relegating them to the "Unconscious," another interesting concept and one which we will have to examine in some detail. This censor may be quite successful in keeping repressed material out of consciousness, in which case it will function merely in dreams and other "Unconscious" states, but it may, on the other hand, be weak, so that the repressed material will leak through and, while it may not receive full and normal expression, will take the form of symbolic and representative conduct, Stekel's "organic language of the Soul." That is, peculiarities of mannerism and speech, perhaps even functional disturbances of behavior, will be the more or less unconscious expression of the repressed material and experiences or conditionings. Another aspect of the Freudian picture of personality is that of "libido," by which seems to be meant some sort of freely floating energy, because of which or in terms of which the desires of the organism, more technically called "wishes," become dynamic and able to project or to endeavor to project themselves into behavior overtly. This libido becomes shaped by the process of adaptation to the environment, flowing, as it were, into such channels as the personality, as a whole, lays open for it, here repressed, there expressed, sometimes however flowing into abnormal channels, sometimes regressing in the form of expression, so that old ways of satisfying a wish become once more accepted and the individual exhibits childish and infantile behavior, i.e., can find no adult outlets and hence regresses to lower and earlier methods of expression, all in terms of the conflict of the pleasure and reality principles. We flee reality and seek phantasy when

we cannot adapt to it. All this should be kept in mind preparatory to our discussion of the psychology of belief in Part IV.

Even such extreme forms of abnormal personality as that exhibited by the dementia praecox, the hysteric, such personality traits as phobias, manias, such traits as paralysis, blindness, heart difficulties and the like (when there is no evidence of structural change), are due to conflict and its settlement in terms of the mechanisms we have been discussing. There are, of course, other concepts and sub-theories involved in the system originated by Freud, some of which will receive detailed attention later, but enough has been given here to show, in outline, the general aspects of the Freudian attitude toward personality. It is fair to say, of course, that it is all largely speculative, that it has little correlation, if indeed any, with structure, and cannot, at the present stage of knowledge, be endorsed in terms of facts. As a figurative scheme, as a metaphor, it is not unsatisfactory, but it has, if thus regarded, little applied value, whereas the general technique of psycho-analysis, a technique which is, roughly speaking, one for the reshaping of personality or for the forming of a good one, and which we will discuss later in connection with other general matters, is emphatically a practical and valuable therapeutic device. In short, the contrast, in Freud, between theory and the results of application, no matter how much we discount the latter, is profound.[7]

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The Inheritance Theory of Jung. It has often been lamented and with no intent of sarcasm, that the European workers in the field of psycho-analysis and psycho-therapy were not good psychologists before they began their epoch-making speculations. For, when all is said and done, and all the criticisms piled up, it is indubitably true that much of Freud, Jung and the rest of the European group is negatived by its inconsistency, its lack of correspondence with facts, its philosophical and metaphysical trend, its dependence on the personality and attitudes of its originators, its elusiveness and intangibility. What is left, and there is undoubtedly much that is extremely invaluable in the residue, has the further disadvantage of needing to be turned into the language of an objective, scientific behaviorism, a problem which will engage us in a later chapter. Jung is, if anything,

[7] See summary in Gordon, *Personality,* Ch. IX, and references there to Freud's own books; Moore Pt. V. See particularly Freud's *Three Contributions to Theory of Sex* for preliminary discussion of his general point of view in this field, and contrast with his treatment, those of Vaerting and Moll.

still less objective and scientific in his nomenclature and thinking, making the problem of presenting even an outline of his thought in behavioristic terms extremely difficult. However, to summarize some of his leading concepts, it is interesting to note that he, like Freud, from whose teaching he developed his own and from whom he came finally to differ very considerably, postulates a force, an energy, akin to Bergson's "elan vital," which comes from outside the organism, of which we may partake in varying degrees, and which is decidedly not the product of mere metabolism and physiological processes. It is difficult, at times, to decide whether this contradicts the idea of determinism; Freud voted for determinism and specifically mentions psychic determinism, but whether this energy is to be thought of as the physical energy of the environment, transformed in accord with all the laws of science by the organism, is hard to say, since conflicting statements lead one now in this and now in that direction. We may note this point without discussing it further than to say, naturally, that if there is any such source of energy on which the personality may draw without doing so in terms of determinism, then such a system of psychology can never be scientific; can, indeed, not even be a system of psychology.

In fact, in a passage in his Analytical Psychology, Jung goes so far as to definitely say that science and psychology are incommensurable, incompatible; that purpose cannot be studied or handled by science and its specific analytic techniques, and that the more complex aspects of human personality behavior cannot be reduced to or explained by the simpler elements that compose them, since this destroys their teleological and meaningful significance. This is essentially one of the points discussed in the section on emergent evolution and really represents one of the sources of the whole movement which finally culminated in the doctrines we have discussed. But it seems clear that much of the difficulty, as we have endeavored to make explicit, is merely verbal. The question of purpose, furthermore, will receive detailed treatment in succeeding chapters.

In Jung's idea of character there is included a specific factor called the "collective Unconscious," i.e., an inherited set of tendencies, traits, attitudes, a group or collection of potential patterns of reaction to stimuli ante-dating any and all individual experience and due to the past experience of ancestors. Through such traces of inherited ancestral experience, an individual is equipped to meet situations similar to those which his ancestors solved more or less satisfactorily, an interesting variation of the classical theory of instincts. A further development of this col-

lective Unconscious, for these traits are relatively automatic, or at least seldom appear in full consciousness, is Jung's division of personality into eight types, a matter we will return to in a moment. Furthermore, according to Jung, these ancestral traits or patterns of potential conduct do not ordinarily play an overwhelming part in the formation of personality; experience of the individual is relatively more powerful, thus emphasizing disposition rather than character through the abnormal personality may revert, in part, to this collective inheritance. For none of this does he even suggest adequate structural bases, so that, as we have said, the whole matter is speculative, an interpretation, on the level of metaphor, of the complex facts of personality and its behavior.

Jung's idea of the effects of the past experience of the race is interesting also with reference to his application of it to what might be called cultural parallels. Thus, he explains similar incidents, parallel mythological explanations, resemblances in symbols, likenesses in beliefs and practices as due to the common unconscious possessed by many peoples now in different localities or who have existed at different times. Where the anthropologist would explain them on the basis of diffusion or on the basis of the undoubted fact that human nature being everywhere much the same necessarily makes, in similar situations, much the same reaction and thus, simply because it is human nature, acts human under the same or similar circumstances the world over and regardless of time, Jung looks for an inner cause, distinct and inherited in a specific sense rather than in the more general one of like structure acting alike under like conditions.

From Jung's point of view, when disposition is lacking, i.e., when the environmental factor fails to enable the individual to solve a problem or to adjust, then the compensatory inherited unconscious plays the necessary part, if and when it can. But, since it is unconscious, the adaptations brought about through its activity are primitive, at a low level, more or less unsatisfactory and incomplete. This is, of course, to say the same thing as we have, in another connection and from another point of view, brought to notice, namely, that when we lack an adequate habitual or acquired mode of reaction, we tend to react either in terms of earlier and simpler habits or to explode in terms of almost unconditioned drives and emotional reactions. But where this latter statement is objective and takes account of structure, Jung's is mystical and speculative, pointing to no structures and having no facts to support the assumptions.

Returning again to the temperamental aspect of personality,

Jung here makes a very definite and interesting classification into types, the types exemplifying the particular forms or contents of the collective Unconscious which a given individual inherits. That is, the types he specifies are definite inheritances, and conduct in terms of them is really conduct in terms of the particular racial inheritances inherent in the Unconscious of the individual. There are, in Jung's later analysis of the situation, following a more simple earlier statement, two main types, the so-called "extravert" and the opposite, the "introvert." Perhaps it is better to call these, as Jung sometimes does, attitudes, and to call the subdivisions of each the types, since both extravert and introvert are such in respect to this or that type of behavior or on this or that level. The four types or levels or avenues of functioning are; sensation, intuition, feeling, and thinking. So that one must, finally, in following Jung's scheme of classification, locate an individual as an introvert or extravert of one or the other types. Still further, a given individual may, as regards one field of behavior, religion say, be of one type, and as regards another, say business, be properly classified quite differently. Also, an individual may shift during the stresses and strains of illness or in crucial emotional situations. The actual terms introvert and extravert are somewhat difficult of exact definition, and the whole system reflects the personality of the originator or that of the classifier, when it is put into practice. There are as yet no objective tests for exact discrimination between either the attitudes or the types but, putting the thing as simply as possible, the extravert is the individual who is interested in and orientated toward things and people, whereas the introvert is the one who is more interested in and orientated toward the effect of things and people upon his own organism or personality. While self-consciousness is not at all a symptom of introversion, it seems to have affiliations; also, James' tough-minded type is similar to the extravert and his tender-minded to the introvert.

One further general aspect of Jung's concept of personality needs to be mentioned, namely, his more direct and concrete insistence on the purposive aspect of personality. Where Freud tends to explain personality reactions in terms of inherited structure and past experience, Jung tends to emphasize the purpose of life, the ideals an individual has, and the strivings in which he indulges in order to realize wishes and desires. While, as usual, there is much that is merely verbal in this, and acknowledging the fact that purposes must be understood as present sets due to past experience, it is none the less true that we cannot sometimes

understand a reaction to a situation except we bring in this aspect of ideals, striving, and the like.[8]

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The Will-to-Power of Adler. Where Freud, in his analysis of personality, emphasizes the push of the past, the pressure of energy, particularly as embodied in sex urge, and sees much of human conduct in terms of this same almost mystic sex push, Jung both denied this universality of sex as a motive and divided the dynamics of the personality into a partial push from behind and a partial pull from the future, seen as purpose. Adler, another pupil of Freud, who also came to differ profoundly and even fanatically with his teacher, emphasizes still more than Jung the purposive aspect of personality, and makes the "end in view" the dominant and overwhelming factor in all personality situations, man's purpose always being to achieve, to express, to create something "higher," or to put it more in the words of Adler himself, to constantly gain more and more power, ascendency over the environment and over sex itself. In other places Adler expresses the strivings of the personality as indicative of the effort to achieve complete "masculinity," quite evidently a figurative term, though Adler takes it concretely. To Adler, Freud's sex aberrations of conduct are merely symbolic ways of representing the achievement or the attempt at achievement of masculinity, and therefore these peculiarities are not to be thought of as being valuable *per se* to the ego but as steps in the achievement of the final end, sexual domination and sexual freedom.

All this is as little related to anything even dimly like a behavioristic approach as can well be, but in one other contribution Adler has come much closer to structure and to the possibilities of writing the behavior of personality in terms of S——R, namely, in his doctrine of organic inferiority and psychical compensation, which is perhaps his outstanding contribution to the whole field. Put in the lowest terms, the theory states that an individual born with a defect in structure, either in motor, in sensory or in other parts, will tend to develop traits in behavior to compensate for this and thus enable the personality to compete and to succeed even though crippled. Indeed, some of the greatest achievements, according to Adler, were originally motivated in this way. Thus, the fact that Demosthenes stuttered

[8] See Gordon, Ch. X; Jung, as listed there, particularly, his *Psychological Types;* also Moore, Part V. See McDougall, particularly, Ch. XXVIII; also Hinkle, for criticisms and modifications of Jung's scheme of classification.

as a youth, brought him to seek such compensation as finally led to his being the greatest orator of his time. A cripple develops some mechanical or artistic gift, the physically small seek authority, the weak, the halt and the lame develop this and that personality trait on the basis of an acknowledged inferiority, in order to achieve superiority and conquest. The "will to power" develops whatever gifts the individual has, regardless of defects that would otherwise defeat the struggle for superiority. The so-called "inferiority complex" is the conscious or unconscious aspect of this defect, and is responsible, according to Adler, for much of the conduct we call neurotic or even insane, these being poor and inadequate ways of asserting the will to power, or demonstrating the ability of the personality to achieve success, attention and service.

Another aspect of Adler's analysis of personality is his peculiar treatment of sex, a subject, incidently, as has been noted here and there, all the pupils of Freud and Freud himself, treat in a manner very different from that based on an objective structural attitude. To Adler, every individual is a blend, a compound of male and female characteristics and traits, one of which, to be sure, usually preponderates, but not necessarily that one which common sense and overt structure would indicate. Neuroses are to be understood as the result of efforts to become that which structure makes impossible in this connection, as well as the result of mistaken efforts at compensation and achievement through development of abilities to match inherited deficiencies. Adler is perhaps more interested in the dispositional side of personality than in the inherited temperamental side, apart from his doctrine of organic inferiorities, and is, on the whole, for all the criticisms that may be made, rather practical and pragmatic.[9]

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The Structural Approach of Kempf. It must not be thought from the above very summary treatments of Freud, Jung and Adler, that there is nothing in their contributions meriting attention. Quite on the contrary; there is much in each of them that merits careful attention, the main criticism here being that, from the point of view of the present book and that of an objective, demonstrable, scientific behaviorism, their contributions cannot be taken as expressed, or be accepted as established fact, or made the basis of practice, until the concepts involved have been worked

[9] See Gordon, Ch. XI, and Adler as listed there; also Moore, Pt. V. See also Weininger and Vaerting, and confer, again, Freud, *Three Contributions*,

over and the demonstrable separated from the merely speculative. As a matter of fact, the whole school of psychoanalysts, for all their mutual differences, and for all the difficulties involved in nomenclature and demonstrability, have been among the very few really fruitful sources of psychological theory for some years.

But, as we shall see, some effort has already been made to reduce the psychoanalytic schools to the basis of an objective and dynamic behaviorism, and perhaps the most notable attempt is that made by Kempf, an American psychiatrist and psychologist, while a later investigator, Hamilton, has carried the matter a bit further, though his interests are not primarily that of personality. Kempf, in short, has endeavored to translate Freud and his associates into the language and the concepts, the assumptions and the methodology of behaviorism. His general thesis is, that all behavior is directly or indirectly the result of alternations of tension of the "autonomic segments," meaning by this term the nerves controlling the circulatory, the respiratory, the digestive, the excretory, the genital and the glandular organs, and the connections between them and the organs themselves. The various "segments," i.e., such as the respiratory or genital or circulatory, are subject to disturbances, fundamentally of the nature of increases or decreases in tension of the muscles (unstriped) involved, and such changes are called, by Kempf, "affective cravings." Thus, the feeling of hunger is the (conscious) perception of kinaesthetic changes arising from postural and tensional changes in the musculature attending the stomach. Such changes in tension are the structural bases for conduct which seeks food. Naturally, as evolution has progressed, and structure become highly differentiated, and motor, receptorial and connector apparatus has been developed for the performing of specific behavior, the situation has become complex. Such developments represent accessory apparatus, and become essentially the servants of the real basis of activity, the autonomic segments and their cravings. All conduct, no matter how complex, no matter how abnormal, is conduct in the service of the autonomic segments; all conduct seeks to relieve tensions in one or another or in several segments, i.e., all conduct serves appetites, hungers and the like. This is, of course, but another way of saying, as we have already put it, that all behavior in terms of drives and that the mechanisms initiate nothing, being merely for the purpose of satisfying the drives, intelligence being, as has been indicated, merely a late development in these mechanisms.

Thus, to take a concrete example, an affective craving, due

to postural changes and tension conditions of the muscles of the stomach leads to the perception of hunger. Due to past experience and conditionings, this starts motor reactions, the sorting of percepts, the exploring of the environment and finally, it may be, through the correct use of such percepts and the fitness of the environment, leads to the getting of food and the consequent satisfying and releasing of the tension of the autonomic segment in question. This process may become as complicated as you like, leading to such activities as travelling, using the phone, buying things, arranging for credit; but all such activities are learned conditionings and essentially in the service of the craving, the need, the hunger, as instanced in the condition of the tonus of the segment.

Further complication ensues when two cravings are mutually incompatible due, usually, to training and conditioning, or when conditioning and pain have so modified conduct that the satisfaction of a craving becomes impossible or improbable. These complexities of cravings and conditionings are so great that it is improper to speak of much adult conduct as being fundamentally and directly the simple functioning of a craving. Adult life and mature personality shows too much of the effect of the environment and of early conditioning to be seen, as such, as merely the satisfying of simple autonomic cravings, though it is equally true that the beginnings of such mature conduct were in terms of the simple cravings. So that Kempf is at one and the same time a determinist and yet able to see that experience adds something to nature and structure that was not originally there, and that it is futile to label all adult conduct in such simple terms as does, say, Freud, and to see in all conduct, sex, or with Adler, the will to power, or with Jung, a collective Unconscious. Personality is complex, and while it has simple beginnings it soon needs other things than just the original cravings to explain it. On the other hand, all personality traits were, in their beginnings, in terms of such cravings, and the abnormal personality is just that personality in which the original cravings were inadequately conditioned, so that abnormal conduct is to be seen not so much in terms of abnormal cravings as in terms of inadequate experience. Repression, regression and infantile conduct, as well as more abnormal personality traits, are all to be seen in terms of cravings inadequately, improperly or abnormally conditioned. This is, of course, to say what has been said previously from another point of view, namely, that intelligence is but a mechanism, and that all conduct is in terms of the conditioning of

drives. There is no conflict here, though a slightly different nomenclature.

Kempf also emphasizes the unity of the organism and insists that no conduct, in the final analysis, is to be understood merely as the striving of some one segment, but always as the co-ordination and reciprocal action of all conditionings and all segments, so that human behavior is always and everywhere the behavior of the whole organism in its hereditary and environmental completeness. Conflicts are to be seen not merely as conflicts between opposing or antagonistic segmental cravings, but as conflicts between the personality and the environment, particularly the social environment, custom, law, tradition and authority.[10]

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The Integration Attitude of Janet. Janet's attitude toward personality as a whole, and particularly with reference to abnormalities has, or at least had, a great deal in common with that of Prince, and both deserve, in view of their general attitude, the description of neurological. In this approach to the problems of personality, while much mention is made of forces, energies, and what appear at first sight to be as freely-floating powers as those criticized in our discussion of the theories of Freud, Jung and Adler, they are none the less at least theoretically referred to definite activities of the nervous system due, in turn, to incoming neural energy produced by stimulus from the environment. In the first place, on both theoretical and empirical grounds, Janet assumes the existence of possibilities of human behavior in terms of a graded series of modes or "tendencies" of action, these tendencies being defined as "a disposition to produce a series of definite movements in connection with a definite stimulus." This has interesting relationships, at least in theory, with the discarded "instinct endowment" that was discussed in Part I and also with the just presented theories of Kempf, which latter, however, are much more definitely structural and demonstrable and more in accord with what we know in other respects about human nature and behavior. Each such tendency, furthermore, is the expression of a definite amount of force, the higher tendencies having more force at their disposal or representing more power. Individuals vary as regards not only the tendencies, but also the force which each is or has, the lower tendencies being more or less common to all individuals, the extremely high tendencies being exhibited only by the exceptional individual,

[10] See Gordon, Ch. XII; and Kempf, particularly the *Autonomic Functions.* See also his *Psychopathology,* Ch. I.

the genius. Rest, sleep, drugs, exercise, diet and the general problems and situations of life modify the tendencies and increase or decrease the force at their disposal or stored up in them.

In addition to these tendencies, existing in a sort of rising hierarchy, there also exists in each individual, a sort of general tension pattern or tonus, which also varies with the vicissitudes of experience and physiological-psychological stimulation and general conditions. This general tonus, characteristic of an individual, consists in a sort of preparedness for action in terms of partly natural endowment and partly learned experiences and is, in a sense, a sort of widely applicable Gestalt, not merely toward intellectual or mental but all other aspects of experience. The tensions of the separate tendencies, as well as the more general tonus itself, are each stimulable from within or without, exogenously or endogenously, resulting in behavior in terms of the tensions and their associated or stored-up forces freed for action, whether in the form of overt adjustments or inner fantasy. In general there are three so-called principles or laws of stimulation; first, the principle of the mobilization of forces; second, the principle of psychological equilibrium; and third, the principle of irradiation or psychic syntonization. According to the first of these principles, an individual often displays unwonted and unexpected, more or less sudden, activity, using reserves not usually called on or even suspected to exist. Such reserves are stored, as forces, in the tendencies, and apply much more to lower and simpler tendencies than to those higher in the scale. Higher and recently formed tendencies store up and can discharge much less force, the rational and moral tendencies having least of all.

The second of these principles, that of equilibrium, concerns the proper balance between the expression of force in terms of a given tendency, and the general tonus mentioned a few paragraphs previously. Normal behavior requires, Janet further assumes, a balance between these two things; an act of "will" for example, the deliberate doing of some important matter, requiring great force and also high tension or general tonus, whereas mere excitement may have the same degree of force but a much lower tension or general tonus. Balance, in the latter case, may be regained by discharging force through a lower tendency, or the tension may be raised to constitute a balance. The third principle covers instances of general raising of tonus or tension following the successful performing of some important act, resulting in the discharge of the stored force in a tendency high in the hierarchy. After a successful deed involving behavior

tendencies high in the scale of the hierarchy, an individual is "flushed" with a sense of joy, excitement, power; in a word, the general tonus has irradiated on a high degree of tension.

Janet describes the abnormal personality and, in a sense, classifies personalities in terms of these fundamental assumptions and principles of conduct. Thus, the abnormal personality is one which, either because of poor endowment or because of exhaustion through the stresses and strains of previous or contemporary experience, is reduced to the possibility of conduct only in terms of the lower tendencies of the hierarchy, those more automatic, those requiring less general tension and tonus. Such an individual cannot function in terms of tendencies at higher levels, and consequently shows defects of judgment, action, decision and the like. Tendencies to behave in terms of obsessions, impulsions, manias, day-dreaming and fantasy are the objective evidence of such depletion of tension. From this point of view, and in Janet's general theory, suggestion is a process of causing a tendency to operate which could not, without such outside heterostimulus, do so; through suggestion the individual can do what his own will cannot impel him to do. Hypnosis is simply a further degree of dissociation or transformation, whereby an individual's tendencies, which could not be used otherwise, can be brought into play through the agency of another person. And hysteria, avoiding details, is a fixed form of expression in terms of certain insufficient tendencies, and is akin to suggestion in its mechanism.

Janet, though he has recently modified his attitude, originally speaks of a sub-conscious; for Janet this is simply dissociated memories, complexes of thoughts, feelings and acts which usually cannot be expressed in normal moods and conditions but which appear in hypnosis or under other special conditions. These dissociated complexes, or this "subconscious through disintegration" is the basis of understanding hysteria, fugues, multiple personalities and other such disorders. Prince has developed this aspect of the situation further and simply conceives of the subconscious (Freud's Unconscious) as a generic term which includes all processes that the conscious personality is not aware of, further sub-divided into co-conscious and unconscious, the co-conscious meaning an actual split in the personality and forming the basis for a double, being more or less well organized *per se* and taking away, with its formation, groups of memories from the residual or remaining portion of the original personality. The material of the unconscious, on the other hand, is available to the conscious personality under proper conditions.

All this again has its reference to abnormalities of personality behavior, but enough has been said to give a general summary idea of the theory and principles involved. Prince has further modified his theories, originally more akin to those of Janet, in terms of the Freudian and derived schools and theories.

We cannot here indulge in detailed criticism of the above; but it is immediately clear that we again have to deal with speculative theory unsupported or meagerly supported by facts and having little or no direct reference to structure. It is also clear that the tendencies can be thought of as segments in Kempf's terms, and the forces as tensions, again in Kempf's sense, but the whole idea of stored force is dubious and primitive. But the detailed discussion of these matters is best left to the section in which Freud's Unconscious is discussed with reference to the general ideas of dis-sociation and non-association, in Chapter III below.[11]

[12]

Summary. It has perhaps been noticed that chapters more or less definitely or even rigidly in terms of the relation of structure to function roughly alternate with chapters that are far less so. This is inevitable, and merely points out the more clearly that while we do often know the structural bases of some of the simpler traits of behavior, the moment we begin to speak of more complex traits we find ourselves in difficulty. This is inevitable in the present state of knowledge of the complex psychological traits, and particularly so in the case of personality. We cannot, as has been insisted, indulge in the same differential experimentation and manipulation of human behavior that the physicist or chemist can arrange for his relatively much simpler and less precious subject matter, and we are hence often under the absolute necessity of endeavoring, without what would be for other sciences adequate grounds, to come to such conclusions as will enable us to check back and forth and either reinforce such tentative conclusions or make others that will perhaps be more promising in the testing.

At times in the history of psychology there has been a drift toward what really amounted to a frank acknowledgment that the very name was a misnomer and that, in the very nature of things, there could not be a real science of psychology, the little that was known being really physiology or biology and not, properly speaking, deserving any new name. In response to this,

[11] See, for Janet, particularly his *Principles,* Part II; also the *Hysteria* in general. See Prince, both his *Unconscious,* and *Dissociation.* See comments in McDougall, Chs. VI and XXXIII.

several movements, such as the earlier behaviorism, grew up in the attempt to make the subject-matter of the science of psychology independent of all other sciences, even though borrowing and overlapping, as is true even of the more independent physical fields. This laudable effort, however, in some senses defeated its own purposes and, as we have seen, omitted deliberately much of what is, properly speaking, material for a science of psychology. Recently, however, a newer approach is developing, one which is psychology, is science, and is certainly more than a translated and stolen physiology or biology; and while, as has been many times frankly admitted, it still falls short of its own ideals and purposes, it is growing and gaining in spite of difficulties. This is perhaps due to the realization that, after all, the proper field of study of the psychologist is personality; the whole, integrated organism at work; human behavior as a cultural unit, seen in terms of heredity and environment.

But to say that the proper field of study for the psychologist is personality is to outline something that, as matters now stand, is difficult to attain to for all the reasons which we have frequently stated. More experimental work, more observation, more insight is needed, all directed toward the final goal, an understanding of personality. Much psychological work, in the past, has been piece-meal work, looking for results that had significance merely with respect to the narrow field of research; the present demands that research be in terms of the understanding of personality, and that all behavior finally be seen from the point of view of synthesis and integration though on the basis of careful and exact analysis. This note of integration and synthesis runs through many new writings and investigations and is, perhaps, the most healthy note in the recent history of the subject. And, while what has been said in this chapter has been largely speculative, we will return to the subject from an experimental and more objective point of view in a later chapter.

In this present chapter we have examined various proposed and, on the whole, more or less speculative theories of personality, its meaning, origin, growth and classifications. And, again on the whole, it is clear that, from the point of view of the proposed general plan and technical approach of this book, Kempf has more to offer than any of the others, simply because he is closer to at least an assumed and theoretical basis in structure for personality and personality traits and, secondly, because his general system is more open to observational and experimental testing and evaluation. Yet it will have been noticed that there are many points of resemblance between all the theories we have

discussed, and this is perhaps inevitable in view of the fact that they have all, directly or indirectly, including Kempf, derived from the original contributions of Freud. And it is clear that all of them, in one sense or another, are dynamic, synthetic, genetic and interested in the problem of adjustment and the factors, external or internal, which lead to consummation, overtly or in terms of symbol and fantastic substitution and compensation. In none of them is to be found the atomistic emphasis found elsewhere and which we have termed (while admitting it to be important and necessary as a preliminary basis), sterile in so far as it does not and cannot give us what is the final need of any science of human nature claiming to have real understanding,—namely, a knowledge, a control and a technique of personality as a whole, as an integrated unit.

As will be seen in several sections of the next chapter, unless we take into account the adjustive efforts of the personality, we cannot and will not be able adequately to either understand or manipulate behavior. The distinctions between such forced antitheses as structural and functional, the effort to classify the causes of personality disturbances on the basis of those called physical as opposed to those called mental, the effort to separate the causes of disturbance into those due to environment and those due to heredity will again show the artificiality of mere atomistic analysis, mere verbal distinctions, classification for its own sake. To put what we have previously expressed in new form, we might say that it is infinitely more important and infinitely more productive of both understanding and control to show the relationships of various traits and disturbances one to another, to show their relative emphases and differences, than to show how they may be artificially classified into the divisions of a system of categories which ignores, in the exigencies of classification, all but the selected aspects on which they are classified. Just as one cannot draw a sharp and definite line of distinction between normal and abnormal without losing the essential meaning of both terms, so also one cannot draw any but relative lines of distinction between the various disturbances within the group we finally come also on relative grounds, to call abnormal. This is, in no sense, to do away with distinctions and to merge everything into a hopeless conglomerate; on the contrary, it is to throw light on both sides of every relative distinction we make and to see more clearly the significance of traits and personalities at one end of the scale, simply because we have a scale and it has another end. More is to be learned through comparison and through relative emphases than through verbally originated and

verbally supported artificialities that exist in fact and in nature not at all.

To give an analogy, which proves nothing but which may make the meaning of the above clearer: suppose one enumerates, in the most exact quantitative sense, every muscular contraction, every change in circulation, sensory adjustment, every change in heart-beat, blood-pressure, ductless gland activity, and so on, that an individual makes during a hour's behavior; a reading of this exact and exhaustive catalog of events however carefully and accurately observed and recorded will, as such, tell us little or nothing; one could not tell, necessarily, whether such a catalog represented the efforts to win a game of tennis, or to plead a case in law, or to sell an issue of bonds. Only if we take into consideration the evident or stated purpose, as expressed in both verbal behavior and also in terms of evident environmental evidence, will we clearly see what the personality is doing and trying to do.

This concept of purpose need neither frighten us, nor lead us to do away with the working assumption of determinism, nor yet to deal with intangibles. Purpose is emphatically a present status of the organism as shown by direct and indirect evidence and in no sense anything that cannot be put in terms of structure; purpose is, in this sense, a set of past experiences, a Gestalt in terms of present stimuli and past conditionings but, while it is emphatically all this, it is also a very important aspect of the behavior of an individual at any moment and is in no sense open to direct observation by an observer or present in terms of the mere atoms of behavior. It is a synthetic aspect of a personality's behavior, a matter of patterns, integrations and relationships, one more apt, unless we can on the basis of our own past experience as observer justify a judgment, to be exhibited in verbal than any other type of behavior. This, of course, as we have shown, brings in inevitably the question of introspection, but we need not here again argue that point. The reader is referred back to several discussions of this particular aspect of behavior for arguments pro and con, particularly to those in Chapter II of Part II, and with reference to the other general aspects of the argument and position to the following two chapters and to Part IV in general.[12]

[12] See Holt, Hamilton, Weiss, Watson, *Psychology,* Chs. X and XI; *Behaviorism,* Chs. XI, XII. See, for final critical comparison and summary of the work of Freud, Jung, Adler, Janet, together with historical back-ground and cross affiliations, Lectures I to III of Hart.

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CHAPTER II

THE ABNORMAL PERSONALITY

1. Significance of the Term. 2. The Pragmatic and Social Emphasis. 3. Systems of Personality Classification. 4. Psychiatry and Psychology. 5. Traits of the Abnormal Personality. 6. General Discussion of Theories. 7. Heredity versus Environment. 8. Psychoneurotic and Psychotic. 9. Mental versus Physical Causation. 10. The Question of Structure versus Function. 11. Some Illustrative Cases. 12. Psychiatry and Personality. 13. Sleep, Suggestion and Hypnosis. 14. Summary. Bibliography.

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Significance of the Term. When we discussed abnormalities of intelligence, difficult as it was to suggest even semi-objective standards, we did find at least a tentative basis in the average behavior of individuals all of a given chronological age, measured on a common performance scale. For all the criticisms that could be offered and were, in part, discussed, we did at least find some more or less tangible testing devices for placing individuals, with reference to such a scale, in their order of merits. And while we found we could not determine exactly what part heredity and training played, relatively, in determining an individual's score, we concluded we did have a reasonably decent justification for claiming that we had, however indirectly, measured what was in question, and that the norms were, in some sense, proper and just. In all our discussion we have tried to avoid undue dogmatism, hence the mild claims now expressed.

In the case of norms for our present field of attention, namely, the whole integrated personality, we are still further at a loss. However dubious we may be about the norms of intelligence, we must be still more dubious in the present instance. And this in spite of the fact that, in the summary of the last chapter, we asserted that when all is said and done personality is really the main interest and chief concern of the psychologist. Intelligence, as we have seen, is a tool, and however different the fields in which two intelligent people may perform and exhibit that intelligence, it is probably mutually recognizable and will be acknowledged by each, even though the degree be disputed. But it is empirically quite evident that one degree or rank of attainment in personality, assuming there is any way of measuring it, will not usually recognize or acknowledge another, or do it full

justice. For, as we have seen, personality is essentially individualistic, a compound of many, indeed all traits, and so complex, so open to change, so frequently finding expression through symbol and substitute, that to do it justice needs more than good intention. Each personality is all but certain to use its own traits as a measuring device, thus defeating any general objective estimation.

We saw, in the case of intelligence, that there was no way in which we could escape all the difficulties and direct attention to the immediate measurement of structure,—the structure responsible and basic for the intelligent behavior we were measuring indirectly. Even more true is it that we cannot measure or even suggest what structures, except in a very general way, lie at the basis of personality behavior. We must again measure, compare and estimate indirectly. But even granting this, the problem remains much more difficult than in the case of intelligence, for it is difficult, if not perhaps at present impossible, to find even indirect measuring devices that are quite satisfactory. To be sure, as we will see in a later chapter, there are certain tests which do measure what we might call personality traits, that is, they measure some of the simpler components of a given personality, point out emphases, types of emotional attitude, species of conditioning, perhaps even major trends toward abnormality. Also, there are certain types of behavior, measurable by mechanical and electrical devices, and the facts thus obtained supplement the knowledge obtained from these other tests but, in no case, whatever the claims of the originators of these devices and tests, do we find a complete, comparative estimate or measurement of personality emerging.

We can hardly, for example, call the introvert normal and the extravert abnormal, or *vice versa,* even assuming (which is probably true) that we can measure and point out these trends or attitudes. Nor would it be fair or well-founded to call that personality which is either extraverted on all things or introverted on all things, normal, and one which is partly introverted and partly extraverted, abnormal. Nor, still further, can we say that any one of the four types, the thinking, the feeling, the sensation or the intuitional, are normal as contrasted with the others. We cannot call a personality abnormal which is what it is because of psychical compensation for organic inferiority; we cannot label either the presence or the absence of the "will-to-power" normal; and if we attempt to classify in terms of segmental cravings we are, in the long run, from the point of view of the unity of the organism, brought back to attempts to judge

the complete, unified, integrated behavior of the whole personality. We cannot glibly assume the superiority of the more objective and more ordinary types of behavior and then call the artist, the religious minded, the patriotic, the self-sacrificing, the spiritual minded, the philosophic and the like, abnormal. It is just those systems of personality psychology which have made these absurd and dogmatic statements which have brought the whole subject into disrepute and made even more difficult the task of outlining a sane, a balanced, a scientific and workable system of classification and estimation.[1]

[2]

The Pragmatic Emphasis. If, however, we abandon for a moment these more exact and technical difficulties, we can perhaps find some decent basis for judgment in terms of the ordinary process of living and social adjustment. Just as it is true that, in the long run, intelligence can only be judged in terms of its functioning in the actual situations of life (results of tests notwithstanding), so also with personality; the real measure of a personality is the ability of an individual to live a normal, well-balanced, creative life in his physical and social environment. To be sure, these terms leave a lot to be desired as regards accuracy, and omit all consideration of a quantitative nature, but there is surely no need to again repeat the list of difficulties which stand in the way of the social sciences attaining, at least in the present, the objectivity and quantitative exactitude of the physical sciences.

The question, then, of the normality of a personality may well be shifted to a consideration of the normality of the individual's career in society and in life, care being taken not to confuse and confound the issue by judging in terms of any particular type of personality or angle of interest. From this point of view we can reasonably claim that a normal personality will give balanced and overt expression to all the major drives and natural interests, will find the major part of satisfaction at first hand, will indulge in little or no fantasies as substitutes for unsatisfied and thwarted needs, will exhibit a flexibility of attack on problems, will seek the friendship and company of others of both sexes, will have few if any repressions, will not regress at all, will indulge in no infantilisms, will be critically but not morbidly aware

[1] Gordon, *Personality,* Chs. XIII to XVI, *The Neurotic Personality,* throughout; McDougall, Ch. XXXIII. Also, in general and throughout, Kempf, *Autonomic Functions* and also *Psychopathology;* Jung, *Studies in Word Association;* Janet, White, Hart, Meyer, Myerson, Conklin, E. S., Hamilton. See, also, Taylor, Chs. I and II.

of his own motives and needs, will respect age and authority without becoming subsidiary to it, will be independent and yet not arrogant and tyrannical, will see others as co-operators, neither use or be used by others as a tool, be able to endure occasional solitude without becoming distorted, have an open mind for new evidence on all subjects, will live primarily in this world, treat ideals as inspirations for further adjustive behavior and not as hostages to fortune; in a word, be a good animal on each and every so-called level of behavior.

We can also state this from the opposite point of view, listing the traits or adjustment reactions of that type of personality that is abnormal, though again it is frankly acknowledged that the treatment is thoroughly pragmatic and, while founded on wide observation is, none the less, a division or classification by definition in advance. However, without arguing this point further, let us understand here by an abnormal or, as it is sometimes called, a psychopathic personality, one who reacts too easily, particularly to pleasure and pain stimuli or situations, whose reactions are too prolonged, persevere unmodified too long, do not become adequately co-ordinated and sub-sumed, who gives too pronounced a reaction to a relatively minor stimulus or situation, who is too open to suggestion, who is relatively shut-in or even definitely anti-social, and who is usually too easily conditioned and also too easily unconditioned or re-conditioned; in a word, one who is too sensitive and unbalanced and too much at the mercy of the environment, tending to "short circuit," as it were, on lower instinctive or emotional levels. Perhaps we might put it another way by saying that, while heredity plays a definite part, just as definite of course as in any other case, the heredity in question is such that, because of its structure and biological make-up, it is unfitted for an ordinary environment, being too easily wrecked and unbalanced and distorted by environmental factors.

It is frankly acknowledged that the use of the word "too" so frequently in the above paragraph, while it does not exactly beg the question, does leave it open to a more desirable quantitative re-statement, but this is not possible at the present status of the knowledge we have. If and when we can construct for personality traits such scales of average performance as we have seen are now in use for intelligence ratings, we will be in a much better situation, and there is no logical or psychological barrier against doing this. It is simply a case of time and opportunity. One point, however, should be stressed. In many writings on this subject the psychopathic or abnormal individual is held up as a

sort of "sensitive plant" capable, under the best circumstances, of more than the average, but unfortunately turned loose in a bitter and hostile world. This is, in large degree, sentimentality; the really good endowment will give good results in all except a most unsatisfactory environment, and to placate the weak and the pathological with a virtual admission that the fault lies not with them but with an unappreciative world is probably bad propaganda and is certainly bad advice.

It is granted also that all the above is more literary than objectively scientific, since we cannot now put personalities as integrated units through any measuring process which will indicate, directly or indirectly, their value; but since each and every trait which was suggested in the above description as one belonging to or absent in an adequate personality is now directly or indirectly measurable as a trait, we can, in proportion as any such list of traits is really properly indicative of a good, a high, a worth-while personality, indirectly and inductively measure personality. In other words, the real difficulty is not that of measuring, fairly accurately, the presence or the absence of the traits listed in the verbal description above, but in the truth or soundness of the list of traits. However, since this list is, in some degree, a matter of consensus of opinion of experts and those well acquainted with what are called abnormal personalities and since, also, it does list traits which undeniably have relationship to biological and physiological welfare, it is probable that the list fairly well represents at least an approximation to normality of personality, some traits perhaps being missing, others certainly overlapping, some perhaps being less important or even unnecessary.

Furthermore, any such group of traits which, when properly integrated, makes for an adequate and normal personality, also gives a basis for estimating the abnormal personality, both as regards direction of abnormality, and degree; and also offers some ground for what, after all, is quite as important as description and measurement after the fact, namely, proper training and conditioning of drives and segments in early life toward the attainment of such normality as the list indicates. It is not for one moment implied that such a description of a normal personality will meet with general approval; in fact it has been definitely stated that in so far as a given personality differs to any considerable degree from another, each will find it difficult to value the traits which the other has. But all this is of course difficult to establish, and we had best proceed, for the moment at least, to other considerations.

There is, however, another way of re-stating all this, a way hinted at in the opening paragraphs of this section; one, moreover, which will connect up the present discussion on the distinctly abnormal personality with later discussions of trends and beliefs, personality traits and behavior compensations which, while emphatically those of normal and even very average personalities, none the less, as traits, border on and suggest, by their similarity, a certain connection with those of the abnormal individual in both origin and function. Our listing, above, of what might be called single traits characteristic of a distinctly abnormal personality, already suggests the shift in emphasis to what is best called, for all its vagueness, social adjustments. That is, putting the whole previous argument into social terms, we might say that an individual or a personality is normal in proportion as he is acceptable as a companion and co-operator in the activities of social living, in proportion as he can, for all his differences of belief and opinion and attitude, enter into communal labor and business, share in plans and purposes, exchange opinions and experiences, contribute and receive advice, in short, be a productive unit of the community.

Where and when to draw the line is difficult if not impossible to say. Certain individuals, because of very evident or strongly suspected incompetence, we place in institutions for the abnormal; others we trust only with relatively inconsequential matters; others, while we think of them as queer, we none the less allow to handle important matters. It is all emphatically a pragmatic and empirical judgment. And when we consider, as will be done in Part IV, the opinions, the beliefs and the techniques of adjustments of such average and actually functioning citizens, we will be forced to acknowledge that many of their beliefs exhibit as little a foundation, have as little to justify them objectively, have as far-fetched and fantastic implications as have those of the group socially labelled as actually pathological. The point of differentiation really lies, as will be seen, in the ability of the personality to integrate its beliefs and those of the community in some such way that, regardless of whatever differences of belief may exist, social living can go on, whereas the definitely pathological in the institutional sense cannot, either because of his beliefs or the overt expression of them, mingle on normal terms with his fellows. But it must be again insisted that the whole distinction is a pragmatic and social one, and in no sense lies merely or even emphatically in the nature of the beliefs held or the behavior items, as such, but as much or more in their

incompatibility with those of the great majority. But to this, as has been said, we will return.

Another aspect worth mentioning here, to be discussed in detail later, is the distinction between peculiarities which show themselves largely as general beliefs or attitudes which, while they have, of course, their occasional motor expression and representative and related overt behavior, do not seriously interfere with other proper and expected overt behavior, and those other more definitely pathological beliefs and attitudes which not only are insistently exhibited in overt behavior but which prohibit the expected and proper social behavior. In short, one may be extremely peculiar and abnormal yet, so long as such peculiarities work themselves off and are exhibited with due regard for the ways of the world, they will not, as such, in the present sense of the word, constitute a basis for the decision of such abnormality that incarceration becomes necessary. If personality peculiarities or abnormalities are largely verbal, in other words, or consist largely of patterns of valuation and preference, or beliefs concerning things and activities which do not forbid proper social adjustment, then such a personality, for all its deviations from the normal in either a practical or an ideal sense, will be permitted to function socially.[2]

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Systems of Classification. Abnormal personalities, whatever our personal preference for a basis of general decision and classification, may further be sorted out from several points of view. We may, for example, and in terms of what we have already discussed, divide them into those who are introverted as opposed to those who are extraverted (Jung); or we may classify them on the basis of repression versus expression (Adler); or on the basis of the abnormal repression of some particular drive (Freud, Kempf); or on the basis of deficiency in one or more major aspects of personality, whether drive or mechanism, such as intelligence, motor expression and skill, art expression, and the like; on the basis of physical type (Kretschmer); or in terms of the psychiatrists, into the anti-social, the cyclothyme, the autistic and the epileptic (Bleuler). All these systems or assumptions of classification, of course, overlap and none of them, as such, offer a really satisfactory and workable basis for measurement, prevention, cure or training. Indeed, many systems of

[2] See Taylor, particularly Ch. XXIII; Paton throughout; Hart; White, *Meaning of Disease;* Hamilton, particularly Ch. VII; Schlapp and Smith, Bk. III.

classification tend to be sterile and to rest satisfied with just the act or procedure of classification and, still further and of more serious moment, are apt to confuse causes with effects, symptoms with defects. Any system of classification of abnormal personalities must be careful not to become confused as regards the significance or importance of the purely external evidences of personality peculiarities. To classify all individuals, for example, who weep too much, into one group, and all those who exhibit fear of the dark into another, and those who are "nervous" into still a third, all with certain bodily proportions into another, would be futile but, while the examples are exaggerated, they represent a trend, now happily past, where personality defects or abnormalities were treated just as superficially as this.

We must never forget that overt and observable behavior is the sign of inner needs, strivings, ideals and purposes, and unless we take these inner and structural aspects of behavior into account we will miss the significance of the whole field of personality. To be sure, we may, if we endeavor to get at the meaning of conduct, and in so doing ask for information from the subject himself, be treading perilously close to the dangerous and forbidden grounds of introspection, but we have already in an introductory chapter, and later in more detail in Ch. II of Part II, shown how and under what conditions the dangers involved may be avoided. But it is none the less most certainly true that we cannot deal with personality, even to the extent of devising a system of classification, if we deal merely in uncritical listing of behavior apart from the verbal and mental. What a person actually does would often result in a very different classification than would result if the meaning, the significance, of what he is doing or trying to do were known. This is again to emphasize that a given act always reflects the strivings of the personality as a whole and is therefore never to be thought of or estimated in terms of itself but always with reference to the rest of the individual's conduct, in a word, his whole personality. This general statement and point of view will receive further detailed treatment in connection with other related topics in succeeding sections below.

In short, to summarize this introductory section on the tremendously involved and highly controversial question of the classification of personality abnormalities, it is clearly apparent that there are really several problems, none too carefully distinguished from each other in the usual treatment of the whole question of abnormality. First, there is the question of how to

divide the normals as a group from the abnormals, treated in the first few sections of this chapter; secondly, there is the question of classifying the abnormal group into sub-groups. This second problem is really a more complex one, for the additional question then arises, on what grounds to do the classifying. To anticipate somewhat later arguments, it is evident that one may, at least theoretically, classify on the respective bases of the oppositions, heredity-environment, physical-mental, structural-functional, and that many of the arguments or proposed schemes of classification err in that they do not see that these several sub-problems are involved in even the effort to classify. A further possibility of classification, one only recently given serious consideration, might be stated in terms of the antithesis, description-purpose. That is, to restate all this, one may ask with reference to a given abnormal individual, whether heredity or environment is the cause, i.e., is it defective germ-plasm or defective experience; second, is the cause physical (drugs, disease, accident) or mental (conflicts, problems, thwartings); third, is structure changed (degeneracy, disease, trauma) or is it merely a question of improper conditionings and habits; finally, one may give a more or less static description and inventory of behavior as it is seen by an observer, or endeavor to see the meaning, the significance, the symbolic achievements and consummations in the abnormal traits in question. Certainly, the whole matter is extraordinarily complex and all that can be done here is to make clear the issues involved and to suggest possible solutions and theories for understanding. In view of the emphasis which has been placed in this book on the personality as a whole in its adjustive and consummatory efforts, it is clear that only a scheme of classification which will take this into consideration will suffice for our purposes, and such a scheme will necessarily take also into account all the factors and considerations enumerated above. Secondly, classification, in itself, may seem less important as we begin to understand all the factors involved. Classification, unless it is a means to an end other than just the classification, has no particular value or significance. It is probable, judging from present movements, that this whole question will be replaced and succeeded by other and better, more dynamic and more unified approaches to the whole problem of the abnormal.[3]

[3] See, particularly, Jung, Roback, Bleuler, Kretschmer, Rosanoff, McDougall, Hinkle, Miller. See, also, proposed system of classification, Section 12, Ch. III, below.

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Psychiatry and Psychology. Psychiatry, like psychology, has had a long and interesting and varied career. At times, and under the direction of certain leaders, it has been almost hopelessly sterile, rigidly classificatory, lacking interest in the adequate understanding of cause and effect, and seeking little in the way of cure. At other times and under other inspirations, and notably in the present period, psychiatry has become so dynamic, so imbued with general psychological ideas, so influenced by the writings of Freud and his school, that, in the instances of many definitions, psychiatry and psychology of the abnormal personality show almost indistinguishable terms or attitudes. Still, there is perhaps a remnant of a tendency to see psychiatrical problems in too exclusively a "mental" sense, and while it would undoubtedly be claimed that the meaning of the term mental in psychiatry is broad, it is often still too narrow. Thus, in a recent and important publication in the field of psychiatry, we read that psychiatry is that branch of medicine which deals with the causes, the treatment and the prevention of mental disorders. Still further on in the opening pages, however, we read that psychiatry occupies a peculiar position, concerning itself, as contrasted with other medical branches, with the abnormalities or improper functionings of the integrated personality. In another place, the reader is cautioned against taking the word mental too narrowly, and it is evident that by the terms is meant all the traits, both the mental *par excellence,* and also the others such as sensory, perceptual and the like, which we have included under the word "personality." There is no use in quarrelling over words, but where this particular text takes the broader meaning and follows it out consistently others take the narrower and defeat their own purpose, that namely, of adequately depicting the traits of the abnormal personality from the point of view of measurement, cause, cure and prevention.

Abnormalities of personality, from the newer psychiatrical point of view may be classified, roughly, in several different ways: first, as was the case with abnormalities of intelligence, into those due, on the whole, to heredity; secondly, into those due to the effects of the environment, though again it must be insisted that to disentangle these two causes clearly and sharply is of course impossible. Another division, allowing again for overlapping, is that between the group caused mainly by physical or disease entities, and that due at least primarily to psychological causes. This dichotomy in part replaces an older

psychiatrical division of personality aberrations into psychoses, psychoneuroses and neuroses, the two latter groups now being considered together as the division with psychological causation, and no particular distinction being made between them. A third way in which contemporary psychiatry endeavors to sort out abnormalities of personality is in terms of the dubious and much disputed distinction between so-called 'structural' (or 'organic') types and those called, in opposition, the 'functional'. This last mode of division or distinction is, clearly enough, closely related to the previous one, that which endeavors to show differences on the basis of cause, either 'psychological' or 'physical'. If by 'structural' bases of abnormality we mean those abnormalities due to, caused by, or at least partially in terms of actual physiological, material modifications, degeneracies, injuries, whether these are in turn due to disease or accident or inferior inheritance, and if by 'functional' we mean disturbances having no relationship to these things, but due to a misuse, a mal-conditioning of otherwise adequate structure, it is clear, first of all, that we have a very decidedly theoretical point of distinction and secondly, that it is a difficult matter, except in perhaps extreme cases, to decide when a given personality disturbance falls into the one or the other group.

Certainly it is easy to give examples of cases which, at first sight, apparently are decided instances of the one or the other, but further consideration leads one to again decide that such lines of division are, at best, relative, and in the final issue a matter primarily of convenience as a basis for practical decisions concerning therapy. Thus, suppose one considers a case of personality abnormality that has begun with the onset of a severe fever, that fluctuates, as regards abnormal behavior, with the fluctuations of the disease (fever), and that ceases with it. Is this structural or functional? Again, suppose a series of abnormal personality disturbances are initiated by a severe head injury, or associated with a brain tumor? Functional or structural? Are personality disturbances associated with syphilis always structural and organic? Is dementia praecox (schizophrenia) always organic? And what about paranoia? This whole question is of immense importance, not merely because it involves classification but because we will always tend to practice, i.e., to cure and to prevent, in terms of our major beliefs on this point of the basic classification of the disturbances, but it will be best to consider other matters before going into more detail on the question of the antithesis structural-functional.

Returning for a moment to the general question of classifi-

cation, it is noteworthy that in the classical scheme of division proposed by Kraeplin, personality disturbances, i.e., 'mental diseases' were sub-divided into those based on constitutional disorders (inheritance), alcohol, drugs, syphilis, traumas, and those due to miscellaneous causes. While this is not the exact, but a somewhat modified résumé of the Kraeplin scheme, it is interesting to note that the recent (1917) official classification of the American Psychiatric Association proposes some 22 main heads, many of them with several sub-heads, and that the emphasis in sorting has in part shifted from 'cause' to 'behavior'. That is, where the older classifications stressed origins and etiology, the newer endeavor is to sort out the abnormalities on the basis of the nature of the disturbances themselves, as types of abnormality, as collections of behavior items, as complexes of acts. While there is naturally as great an interest as ever in causation, each division is now separately attacked from that point of view, and there is a tendency to still further sub-divide many of the present division as the knowledge of the behavior involved becomes greater and more detailed. In short, as was previously remarked, psychiatry is now tending to become the psychology of personality disturbances instead of what it once tended to be, a mere cataloging of 'mental diseases'. But to this, also, we will again return.

But it is still true that even such a descriptive, behavioristic sorting out of personality abnormalities is not entirely satisfactory. What is further needed, but clearly difficult to devise, is a system of classification (not that such mere classification is, *per se*, important), which will have a dynamic and a synthetic significance, i.e., will rest in part on the adjustive aspects, the consummatory efforts of the behavior of the personalities we call abnormal. This is, to rephrase an earlier remark about Freud and the psychoanalytic schools in general, one of the outstanding contributions they have made; regardless of their errors and speculative failings, they have striven to see personality disturbances from the point of view of purpose. In this sense, individuals who would ordinarily be classed in totally different groups, and whose actual overt behavior might also show considerable differences would, none the less, often belong in the same group, simply because the apparently unrelated behavior would have much the same significance when its meaning and purpose came to be seen. As we have said, classification is no end in itself, but merely a means to the larger end of the ability to build normal personalities, to control and predict, and to

modify those who have already become aberrant. But to this too we will return.[3]

[5]

Traits of the Abnormal. In our discussion of defects of intelligence, i.e., amentia, we treated also the correlated traits, such as sensation, memory, perceptions, finding that there were characteristic associated defects in these respects going hand in hand with a defect in intelligence, allowing for some striking, though infrequent exceptions. It will now be necessary to canvas the situation with reference to general personality abnormalities, i.e., to see to what extent definite personality disturbances involve disturbances of such behavior traits as memory, sensation, perception, judgment and the like. The situation is more complicated in this instance, partly because we are now assuming that it is possible to definitely declare a given personality to be defective or abnormal and, secondly, because even though we declare it abnormal, we cannot say to what degree, and it is not always clear, as will be further seen, to what group of abnormalities it properly belongs. But ignoring all this for the moment, and looking at abnormal personalities as a group, particularly such a group as is so definitely defective that society has found it necessary to refuse self-determination to them and has put them into institutions for their care, so that they are, legally speaking, "insane", we do find various correlated psychological traits worth examining. At this point it is worth once more insisting on the mechanism aspect of intelligence, and on the priority of the drives and on the facts of conditioning of drives and emotions, for unless we keep constantly in mind these various points of view we will not clearly see the distinction between the aments and the dements, i.e., those whose major deficiency is in the matter of intelligence and those whose major deficiencies are primarily in other directions. To be sure, amentia is a personality defect, but it is only one and, as we said in other connections, it is possible to join other defects with amentia or, on the other hand, to have full, normal or even super-normal intelligence and to have serious personality defects in other directions.

If we consider, first, disorders of perception, we find that many abnormal personalities, particularly several groups of those definitely insane (i.e., legally judged incapable of self control and proper independent adjustment), indulging in what might be called, first, vagueness of perception, second, inaccurate or illusory perceptions (illusions proper) and, finally, such inadequate perceptions as are more properly called, for all the difficulty of

sharp differentiation, hallucinations. In the vague type, all perceptions are unclear, insufficient, confused, strange and uncertain; their meaning is distorted and in part lost; stimulation has often to be repeated or exaggerated in order to get any response. Between such vagueness and uncertainty and weakness of perception and actual misinterpretation, the line of division is hard to draw; illusions are ordinarily defined as errors of perception, whereby, for example, an individual will interpret or understand or respond to the moaning of the wind "as if" it were the voice of an enemy, or to the sound of a bird's singing "as if" to the voice of a friend. Illusions occur, to be sure, in the so-called normal personality, but are then usually recognized, immediately or soon after, as such, and may be shared in by a group, or even deliberately and experimentally produced; whereas, in the case of the abnormal personality, the illusion is more permanent, reacted to as such more or less consistently for even a long period and, in extreme cases, has an effect on other functions of the personality, and is usually quite a personal matter. Illusions occur with reference to any and all of the senses, and with reference to many or to a few types of objects and have, naturally, other modifications and qualifications which need not concern us here.

Hallucinations, as difficult to divide from illusions as the latter were from the vague perceptions, are less common in ordinary life and under normal personality conditions; where both the vague and the illusory perceptions were, in some definite sense, founded on or with reference to some actual external object usually correctly locatable and perceptible to another (normal) observer, and were therefore, at worst, misinterpretations, the emphasis in hallucinations is on the subjective and individualistic aspect of the experience. In hallucinations, while it is difficult if not impossible to rule out all external causes as bases for the misinterpretation still, relatively speaking, the experience is due more to the personality of the subject than to the stimulus or situation; in short, hallucinations are not sharable, are subjective in a very pronounced sense, dependent almost entirely on the thoughts, feelings, fears, and past experiences of the personality.

Hallucinations, like illusions, may occur in terms of any or all of the senses, and are apt to be pronounced in proportion to the acuteness or stage of development of the abnormal behavior, provided the actual mental ability as a functioning mechanism is not diminished. Furthermore, hallucinations, unlike ordinary perceptions (and this again emphasizes their subjective origin or aspect) cannot be ignored; they force themselves, figuratively

speaking, on the personality, haunt him and distress him, being often extremely unpleasant and threatening. Hallucinations, again like the illusions, eventually influence other aspects of the personality, leading to further disturbances, errors of judgment, erroneous orientation, and even absurd and far-fetched errors of judgment, due to the effort to explain and justify and harmonize, with respect to other things, the hallucinations in question. The "explanations" of their hallucinations are often very illuminating to the student, inasmuch as they reveal some of the emotional or conditioned drives and personality purposes back of the behavior disturbance, or the mistaken ideas, far-fetched purposes, erroneous values that have, perhaps for a long time, been part of the personality. Still further, they often lead to direct, overt motor reactions, and the conduct of the disturbed personality in terms of these hallucinations, which are themselves in terms of prior experience of the type we have just discussed, may be dangerous to self, to property or to others. This, in turn leads to what are called "fixed ideas", delusions and the like, to which we will return. All this should be compared with the discussion of belief and "as if" behavior of the normal personality in the chapters on compensation and adjustments in Part IV. The discussion on language, introspection and images of Ch. II, Part II, should also be recalled.

If we consider other functions or traits of the personality, we find that consciousness itself becomes disturbed, becoming clouded or vanishing entirely, so far, that is, as an external observer is able to determine at the moment. This clouding of consciousness involves, usually, a lack of orientation, that is, adequate and sufficient knowledge of self, of the environment and of each with reference to the other, including knowledge of place, time and circumstances, to adequately adjust to the demands of social living. Further disturbances, associated with both hallucinations and disturbances of consciousness, may involve the memory; as retrograde amnesia or forgetfulness of the distant past; imperfect memory of present and just-past events; partial forgetfulness which may be restricted to certain events or certain types of objects; imperfect recollection, so that events are confused and associated incorrectly with one another, the *déjà vu* (paramnesia) of ordinary experience; sometimes what are claimed as recollections are almost completely reconstructed, as apparent memories, out of items originally quite separate in the experience of the personality. Attention is often also involved, and association (taking this in a loose sense), so that one can hardly, in the talk of a given defective personality, distinguish

the real purpose or intention of the flow of words and recollections and the flight of attention which is displayed.

Naturally, with such disturbances of perception, consciousness, memory, attention and association, one will expect to find what we have variously called thinking, mental behavior, substitute behavior in terms of works and symbol, also greatly disturbed. And while we need not, at the moment, debate whether actual intelligence has suffered, so that an original I.Q. would be diminished (a subject to which we will return), it is certainly true that we do find, in such personality disturbances, a variety of mental behavior which is characteristic; quite different in degree and yet similar in kind, to the behavior in which we all at times indulge and which we have already partially discussed in the sections dealing with the relationships of intelligence to facts, to education, to drives and the like. Particularly characteristic of certain types and certain conditions of abnormal personality behavior are what are called "delusions" a disturbance of thought and thinking related similarly to correct thinking in much the same way as illusions are related to correct perceptions. Both illusions and correct perceptions are perceptions, and it is just as fair to say that delusional thinking is none the less thinking. Here, again, the student is referred to the treatment of beliefs and compensations in Part IV, where the part played by these various mechanisms and types of behavior in the personality adjustment of the normal individual are discussed in detail.

Roughly speaking, such delusional ideas, i.e., false conclusions due to incorrect understanding and use of facts and evidence, or ideas in tune with purposes and impulses but false for the same reason, may be divided into three types, the melancholic, the persecutory and the grandiose. Under the influence of whatever factors cause this distortion in thinking, (a topic we will be concerned with later), the personality subject to a melancholic delusion or delusional system of ideas will perhaps express, verbally, complete humility, extreme worthlessness, great guilt with no foundation or an insignificant one in fact, or again consider himself ruined, utterly poor and destitute, or subject to many and mysterious diseases and physical disabilities, or that the body, or parts of the body, or even the universe as a whole is destroyed (ideas of negation). The personality subject to persecutory delusions sees in people and things a malign influence which is hurting or destroying him, though sometimes the source of harm is not known, mentioned, or even suspected. The most simple occurrences are seen as evidence of persecution, daily

events of the most trivial sort are interpretated in terms of the delusion, and the protestations of innocence are often violent and extreme, for this type of delusion is not usually as passively endured as the melancholic. Delusions of grandeur, the third main type, are perhaps more common where real deterioration of intelligence appears to have taken place, and are quite as decidedly out of keeping with the objective facts as in the other two types. Naturally, conduct in the motor sense, as well as in the sense of the expression of the emotions parallels the verbal and delusional aspects of the distortion of the personality, so that posture, conduct toward others, habits, manners and conduct in general show, clearly and overtly, the same attitude toward the universe as the delusions express in words; the melancholic will show, in his general conduct, his sense of inferiority; the persecuted will act the part; and the exalted will exhibit, in perhaps even minute details of behavior, his belief in his own grandeur. The personality with a false, delusional sense of grandeur will dress the part, wear medals, hold court, spend enormous imaginary sums, and confer on himself and on others exalted titles; the persecuted will write letters, lay plots to catch the enemies, misunderstand even slight contacts with other personalities, see in all things a menace; the melancholic will see, in all sorrow, the reflection of his own and perhaps even feel himself responsible for all the sorrow of the world. Furthermore, the emotional expressions have certain peculiarities, peculiarities the normal share with the abnormal but not of course to as great extent and not so frequently, namely, the exaggeration of emotional reactions or their diminution. Thus, joy or sorrow may be, in the abnormal personality, too easily aroused, exhibited in terms of too slight a stimulus, be too prolonged for a given stimulus or situation or too inhibited and too brief; so with all the emotions and the more complex sentiments, as well as regards the general feeling of well-being or depression; all these may be exaggerated in either direction and bear, relatively speaking, improper proportions to the stimulus involved. It will be recalled that we briefly discussed these peculiarities in our treatment of the so-called psychopathic personality and its relationship to heredity.[4]

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Discussion of Theories. Before considering, in more detail, several specific types of personality or, rather, before endeavor-

[4] As for Note (2) and also as for Note (1), particularly Bleuler and Rosanoff. For case studies see Rosanoff, Bleuler, McDougall, Kempf, *Psychopathology,* Hamilton, White, *Foundations.*

ing to analyze from the point of view of endowment and heredity specific types of abnormal personality, it will be best to discuss several other general matters, leading up to a more detailed examination of the parts nature and nurture play in the production of the aberrant individual. The first point needing consideration is that of the relatedness of the traits we have briefly summarized in the last paragraph to our earlier discussions on drives and mechanisms. Shall we, for example, come to the conclusion that the cause of all the peculiarities and abnormalities of behavior are due to the loss, the decay, the warping of intelligence? Or shall we look for the explanation to the emotions, the impulses and the so-called "instincts." That is, are the types of aberration we have just discussed chiefly due to disturbances in drives or in mechanisms? This, for the moment at least, we may consider without taking the other important matter of nature versus nurture into account.

While no satisfactory and well-founded and widely based investigations exist concerning the mental behavior, or the I.Q.'s of those who come, in adolescence or later life, to exhibit extreme abnormalities of personality, it is none the less fairly well grounded, on indirect evidence, that they do not, as a group, show defective intelligence before the episode of abnormality; some indeed bear a record and reputation for excessive intelligence. And, while no general records exist of what the intelligence, as such, is during or after the period of abnormality, general evidence again tends to indicate that, if the personality again recovers, in general, to normal balance, the intelligence is not appreciably diminished. And still further, many cases of undoubted abnormality as regards personality as a whole, sometimes so severe as to require strict restraint, show acute intelligence even during such periods of abnormality. And some types of disturbance in the paranoia group seem almost to exhibit an increase of intellectual ability. So, while exceptions undoubtedly exist, both numerous and extreme, there is enough ground to assume, at least in the present status of our knowledge, that major personality disturbances involving illusions, hallucinations and delusions, may and do occur without impairment of the ability to think, and even in the exceptions we have granted, it is a question, as we shall see, whether the case had not better be stated that we find no outward and overt manifestations of intelligence rather than to conclude that intelligence has actually suffered. Recalling the discussion of the relation of facts to intelligent behavior, and intelligence generally in relation to drives and to character, it is clear that a decent case may be made out,

on the basis of the evidence we have, for an explanation of abnormal personality in terms of exaggerated conditions similar to those which, in the so-called normal individual lead to momentary and unimportant errors and eccentricities or, still further, to compensatory, delusional adjustments of the kind treated in Part IV. This, incidentally, is another link in the understanding of both the significance of the terms normal and abnormal as applied to personality, and of the relationship between them. Our later discussion of compensations and beliefs in the normal personality will show, on another level of course, the same behavior mechanisms as we are discussing here, the main point of difference being, to anticipate, the ability of the personality, in spite of the compensatory fantasies and delusions, to pragmatically adjust.

To re-state the several positions as regards intelligence in terms suitable to the present discussion, we may recall that what is termed thinking is the manipulation of symbols, words or linguistic substitutes of one kind or another that stand for reality and the facts of the environment, past, present or to come, such manipulation being in the service of interests, habits, needs, hopes, ideas and the like, each and all of these having an impulsive drive basis behind them. That is, so far as we have yet committed the argument, the normal and the abnormal individual alike, think to satisfy drives and needs, the drives themselves being much the same, as biological or physiological phenomena, in each case but, and this is the important point, being differently conditioned, differently inter-related in the one and the other. Still further, the personality usually and pragmatically called normal undoubtedly has, in the case of all individuals, its moments of aberration and eccentricity, in which moments, to one degree or another, much the same distortion of thinking with reference to facts and in relation to drives takes place as is symptomatic, but on a larger scale and over a longer time, of the distinctly abnormal.

Thus, to mention concrete instances of such distorted thinking and such aberrations of the normal everyday personality, dreaming in sleep, day-dreaming, rationalizing, recurrent moods, peculiar habits, conflicts, unfounded fears and hopes, superstitions, faiths and beliefs, each and all indubitably bear a real resemblance to and belong to the types of indulgence or eccentric behavior which lead us to designate certain individuals as abnormal-in-toto, simply because of the predominance in their careers of this type of thinking and behavior. Furthermore, cer-

tain social or racial-linguistic complexes and associated conduct and belief, such as mythologies, religions, fairy-tales and folk-lore, and certain group behavior, such as that of mobs and crowds, beliefs indulged in temporarily when under the influence of social contacts, all show the same kind of difference from normal conduct and all bear a real resemblance to the typical behavior of the abnormal personality.

All these various species or kinds of behavior have certain traits in common; they are, first of all, dereistic, i.e., unrelated or very distantly related to reality; second, they are autistic, i.e., intimately related to the self and its needs, desires, wishes and hopes as such and without the proper reference to facts and real conditions. When thinking in terms of facts and reality will not result in the gratification of the desires and wishes harbored by the personality, which desires and wishes represent, of course, conditionings on the basis of hereditary structures or, in Kempf's terms, tensions of autonomic segments, then thinking in terms of words and "images" that have reference to the consummation of the drives, that depict in phrase and "image" the realization of the wishes and desires, will be a substitute form of satisfaction, adjustment and achievement.

It is most certainly not implied that any or all such autistic, dereistic thinking, *ipso facto,* stamps a personality as abnormal; it is perhaps better to say that if it is a characteristic method for the "solution" of problems, if it is a customary resource in trouble, if it is the basis of the main satisfactions of the personality, if it overbalances the rest of behavior and becomes typical, if it interferes with the adjustments we have, more or less arbitrarily, listed as the signs of a normal personality status, then it is abnormal and the personality equally so. Nor is it implied that it is impossible to combine some types and some degrees of at least relatively autistic thinking with successful creative life; nor must the inclusion of religion in the above list of types of behavior that are dereistic be taken without further consideration, which will be given in a later place in the book. But, and this is the important point, such types of behavior constitute a resemblance, a link between the understanding of the normal and abnormal personality, and show once more how intelligence is, in essence, neutral; now offering to support and consummate, if and where it can, a given drive that can find no satisfaction in terms of reality and hence must do in terms of fantasy and, on the other hand, when in the service of a drive which is so conditioned that the environment does offer reason-

able opportunities for consummation, brings about the desired, the relaxing and the satisfying overt and realistic adjustment.[5]

[7]

Heredity and Environment. This general discussion, very naturally, leads to a consideration of the same thing in still more general terms; in terms, namely, of the old diversities, heredity and environment. To what degree is an abnormal personality inherited, to what degree acquired? And here, as usual, not only are the terms confused, but the issue is made still worse by the introduction of terms which beg the question. Thus, the frequent and uncritical use of the term "psychopathic personality," (which we have already discussed), when it is assumed as the structural basis for the acquisition of various personality defects, really makes them, at least in part, themselves an inherited matter. And, if we review the arguments closely, it is clear that the term means, simply and solely, such a personality as does become abnormal. We cannot point out, apart from assumed inherited bases in actual instances of definite abnormality, what a psychopathic inheritance is; we cannot show a psychopathic inheritance apart from the confusing deposits of experience; we recognize one only when experience has moulded it into a definite form of matured abnormality.

Furthermore, while some acute suggestions have been made as to its possible meaning apart from the later developments of experience, there is no experimental evidence concerning even the better and less hypothetical meaning of the term. However, as will be remembered, what has been proposed is this (and it has real merit in so far as experimentation, while not yet actual, is possible), that a psychopathic personality, as a foundation for later abnormalities on the basis of the effect of experience on heredity, is one which is in the very beginning more easily conditioned, yet retains the conditioning less well, one which requires merely a slight experience to condition, and as slight a one to modify or inhibit that conditioning; one, namely, which is more at the mercy of experience and which does not integrate that experience and build up permanent and staunch habits in terms of social welfare and individual adjustment to the mores; one which tends to consistently revert to lower levels of emotional and pseudo-instinctive response. Figuratively, the material of such a personality is soft, on which every scratch and trace of experience leaves a mark, to be easily wiped out however upon

[5] As for Note (1); particularly Hamilton. See also as anticipatory of later treatment of wishful thinking, Rank and Sachs. Also confer McDougall, Ch. X; Taylor, Ch. XXII.

later additional experience. It is clear that experimentation with children at an early age would show differences in these directions and, perhaps, give ground for the separation of them into groups on the basis of the above generalizations, later observation then confirming or denying the assumption that those who show the traits we have suggested do more easily become abnormal under the ordinary burdens, efforts and trials of life in society.

But it clearly will not do, until such time at least as experimentation and observation have established, or more definitely substantiated, the assumption of the existence of such heredity as is implied and designated by the term "psychopathic," to claim broadly and generally that abnormal personalities are the result of a deficient heredity. Furthermore, studies of heredity do not show as conclusive figures as would be expected if heredity is the major factor in insanity, and all such investigations almost deliberately overlook the factors of environment. To be sure, it is easy to lay the blame on heredity and ignore the fact that, after all, it merely pushes the problem back one or two generations, for one can always ask, and in no sense frivolously, where did the beginning come from and why? If a given case is blamed on heredity, where did those who are thus blamed get the abnormalities? Still further, while it is true that certain types of abnormality run in families, sometimes for several generations, it is only fair to say we do not know what the effect on children is of living in an environment where one or more elders exhibit certain abnormal personality traits. It is at least conceivable that abnormality may be learned just as normality is. Behavior is catching, particularly when exaggerated, and an individual with strong conditioning can, whether normal or abnormal in reactions, have a very considerable conditioning effect particularly on those who are yet in the process of forming conditionings with reference to the main and important things of life.

Furthermore, while we can and do point to very definite structural defects in the case of inherited (primary) amentia or feeble-mindedness, we cannot do so in the cases of general personality abnormalities with the exceptions of those types which show disease conditions with consequent alteration of structure due to poisoning, or those which show actual malformation and degeneration. Still further, we have pointed out that the behavior of so-called abnormal personalities is merely a relatively, not a fundamentally, different type of behavior, and that all individuals exhibit, at times and in places and under special conditions, behavior which is the same, though not as prolonged, consistent or systematized, as that of the definitely abnormal.

There is another angle to the question of "psychopathic," with its assumptions of an inherited weakness, that is worth examining. It has never been shown and is certainly strongly negatived by empirical evidence, that the normal individual would survive and retain normality under environmental conditions that were made increasingly destructive to the consummation of normal drives, that were made increasingly rich in baulkings and thwartings; in a word, it is extremely doubtful if there is any organism which would not exhibit definite abnormalities if and when the environment were made sufficiently non-satisfying. Putting this differently, it seems clear that any and all individuals would, under the right or rather the wrong circumstances of environmental situation, indulge in fantasy, wishful consummation of desires, delusions, illusions and hallucinations. From the reverse point of view this simply means that those who have developed abnormal personalities have done so in terms of the environment they have actually lived in and which may have been, for all the superficial appearances to the contrary, a very destructive and repressive one, and that another environment might have resulted in an entirely different development, one conceivably normal. We have, to be sure, no better means, at present, of measuring the safety factor or the desirability of an environment than we have of measuring either the inherited or the acquired aspects of personality, but it is probably true that we could roughly sketch what would be a good or a bad environment for the particular animal called human even with the meager information now at our service.

If the above is cogent reasoning or speculation, shall we then come to the conclusion that we are all potentially psychopathic and that most of us are only saved from becoming definitely so through the chances and vicissitudes of the particular environment vouchsafed us by the grace of Providence? Philosophers, psychologists and psychiatrists have not been wanting to hint even this! There is, furthermore, some little evidence we may join to this speculation, the instances, namely, of the thousands of individuals who were, temporarily or permanently, rendered abnormal in the course of service in the armies during the late war. It is almost certain, on indirect and empirical evidence, that the vast majority of these individuals would never have exhibited personality abnormalities, of any pronounced degree at any rate, had their fate not been to live, for a while, in such an unsatisfactory environment, with its inevitable conflicts, as that of war. In civilian life they would, most of them, in all probability have never exhibited any abnormalities beyond the limits allowed in

ordinary society. This whole question of environment will concern us in a later chapter of Part IV, where the broader question of adjustment from a dynamic point of view will be discussed.[6]

It is also worth noting, that abnormality, like morals, is in part a matter of historical time and geographical location; traits suitable to one time and place being unsuited to another social configuration. From a consideration of all these general matters as well as a more intensive and careful study of heredity with reference to the background of the definitely abnormal and also the definitely normal, the whole heredity aspect is being stressed less and less in the treatises on the subject, and leading psychiatrical investigators are prone to be more frank in declaring that the earlier dogmatism regarding heredity as the cause of abnormalities was overdone and should be modified unless an immensely greater and more reliable mass of facts in its favor is accumulated.

[8]

Psychoneurotic and Psychotic. In the group of personality abnormalities called the psychoneuroses (now, as a group, including the earlier psychiatrical types called the neuroses), is to be seen an emphasis on environment of the kind we have been discussing, for the psychoneuroses are defined (American Psychiatric Association) as "those disorders in which mental forces or ideas of which the subject is either aware or unaware bring about various mental and physical symptoms—in other words these disorders are essentially psychogenetic in nature." In this group of the psychoneuroses are included hysteria, neurasthenia, psychasthenia, and the so-called anxiety-neurosis. But, while it is almost universal in modern discussions of the subject to acknowledge the experiential and environmental incidence of these personality disorders, it is still too frequently the tendency, as we have just seen, to attempt to account for them, more fundamentally, in terms of a weakened, a "psychopathic," or a "neuropathic," inheritance, i.e., a constitutionally present factor. This is indeed the truth in the sense that all behavior is in terms of heredity, and represents the differential product of experience on that basis, a point we have already discussed in detail, but it is a sterile point to make as things now stand for we cannot point out the structural elements that we assume. It is always a ques-

[6] Bleuler, Rosanoff, Meyer, Myerson, Hamilton for general theories and values concerning heredity in personality abnormalities. See also Schlapp and Smith, Bk. I, Ch. I. See Conklin, E. G., for general biological mechanisms of heredity. See also, on concept of psychopathic, Taylor, Ch. XXIII, and confer sections on Kempf and Janet in Ch. I above.

tion open to discussion as to how great a burden a given individual will bear, and to what extent the nature of the burden or burdens is responsible for the particular distortion which the individual exhibits once he has succumbed to the over-load and even if the assumed inherited factor of weakness of nature is taken as a justifiable working concept, it is still another matter to assume that the direction of distortion and the degree of distortion are also inherited factors. Even in the instances of the severer psychoses which are assumed to be entirely on a basis of heredity and to be due to defects in structure, metabolism, germ-cell and actual biological functioning (whether because of disease or accident) there is and must necessarily be also an environmental factor. But to all these considerations, and particularly to the psychoneuroses, we will return in later sections below, in connection with other related problems and evidence and other theoretical consideration.[7]

[9]

Mental and Physical Causation. Reverting to the definition we quoted above as descriptive of the psychoneuroses, the phrase "mental forces or ideas bring about physical symptoms" needs further attention. It is certainly not the intention of this definition, in spite of the language, to separate the body and the mind, the mental and the physical. It is, rather, the intent of the definition to indicate that personality traits of one kind may be due to experiences in a realm quite different; that is, that conditioning through experience can and does bring about modifications of behavior in any and every respect, depending simply on the experience and the personality being conditioned. Thus, some varieties of hysteria are characterized by convulsions, fainting spells, disturbances of feeling and other sense effects, amnesia, mutism and, in some complicated cases, even the reflexes, say of the pupil and the knee may be disturbed, all however without any determinable structural basis or deficiency. In neurasthenia, we find what might be called a general debility picture, plus disturbances of sleep, digestion, elimination, appetite and the sense of well-being, the sexual type being a special picture, and all types presenting a brooding, worrying, introspective preoccupation with bodily symptoms and conditions. The psychasthenic shows morbid fears, doubts and obsessions, and the anxiety type shows a peculiar fear of some impending danger

[7] See Conklin, E. S., Chs. VI to VIII; McDougall, particularly Chs. XXV and XXVII; appropriate portions of Bleuler, Meyer, Myerson, Rosanoff, White, *Foundations*, Hitschmann, Hollingworth, *Functional Neuroses*, Hart and Taylor as above. See Stekel for case material.

which reason will neither name nor yet dissipate again accompanied by various disturbances of physical functioning. To claim, here, that the "ideas" or "mental forces" are the cause of these disturbances is to make the same error that was criticized in the case of learning and in the discussion of association theories, for it is quite evident that, as ideas, they cause nothing, but are merely the verbal behavior which accompanies or is related to the other conditionings which affect whatever organ or whatever conduct is the basis of discussion or classification. It is, without any question, quite as important to avoid, even in phraseology, any separation of "body" and "mind" in discussions of abnormal personalities as in the case of any other division of the field; in abnormal behavior, quite as in normal behavior, the organism acts as a unit, and conduct must be understood in terms of modifications of earlier conduct, and that again in terms of modifications of original nature, the whole process resulting in more and more complex, but more and more integrated behavior, though, as we shall see, such integration may, at times and under special conditions, be in terms of alternate or co-operating, or even apparently antagonistic sub-integrations that yet in some sense make a unit. That is, try to express more objectively and clearly the thought of this last sentence, even in cases of so-called dis-sociation, of so-called alternate or multiple personalities existing in or expressed by one physical organism, there is yet a real integration for all the apparent dislocation and split. But to this, also, we will have to return for further discussion in the next chapter.[8]

[10]

Structure versus Function. This discussion of "physical" versus "mental," one we have frequently encountered in the course of this book, brings us back again to the question we briefly discussed a few sections back, with the proviso that we would return to it, i.e., the question of "structural" versus "functional." Stating the opposition in lowest terms, one school holds that abnormal "mental" behavior, or such abnormalities of personality as we have already discussed are, at least in many instances, due to, based on and caused by a factor of such nature that it can only be called an actual structural change, an organic change in brain cells, in ductless glands, in groups of neurons, or in some such physical structure or many of them. In turn these structural changes, degeneracies or losses are due to accident, disease

[8] See, for this question of the physical or mental causation of personality abnormalities, Hamilton, Cotton, Taylor, Ch. III and, in general, as for Note (7) above and Note (9) below.

or poisoning. The other school holds that many, if not most, such personality abnormalities are due simply to the mis-use of structure which could and would function adequately were the habits which are exhibited as abnormalities modified or done away with. That is, even though structural changes are caused by disease or accident or by the mal-functioning of ductless glands, the personality changes are not in terms of these things but due to other factors over and above them.

Another way of stating the opposition is to say that there are two factors involved; a physical (structural) one, and a psychological (functional) element, and that both are ordinarily necessary for the production of personality disturbances, though such disturbances need not occur with only the physical structural factor. Thus, for example, a well-balanced, well trained individual, with proper habits of emotional expression, with adequate outlet for needs and desires, with no highly developed fantastic ways of satisfying objectively-balked or thwarted impulses, need not become abnormal even if injured structurally or through disease. This is but to say that disease or accident is merely the final straw which leads a badly adjusted and already shaken individual to become markedly and observably abnormal. In short, as elsewhere, it all depends on what one means by the terms in question. In so far as we have already committed ourselves to the statement that all experience modifies structure, then it is also correct to say that experiences which so modify structure that inadequate patterns of consummating needs and desires result, and in so far as these neural patterns then fail still further in their functioning toward adjustment, and the individual becomes definitely pathological, we have at least that much structural basis, (i.e., inadequate neural patterns of response) for the abnormalities. But as is evident, all this is pretty much a matter of splitting hairs and indulging in artificial analyses of isolated facts. The situation in concrete reality is an individual with abnormal behavior, in whom may sometimes be also found physical disturbances and abnormalities. Thus Mott reports that cases of dementia praecox show evidences of abnormal and insufficient development of the sex glands, changes in the brain neurons, and other abnormalities of hormone functioning, but it would be rash at present to conclude, since the evidence is certainly not at hand, that all individuals thus physically characterized have or will develop schizophrenia, and that those who do not have such physical traits are exempt from the characteristic personality disturbances.

There is still another way of looking at all this; of many indi-

viduals who develop behavior and personality abnormalities roughly of such general nature that they are all classified, say, as paranoia cases, why do some exhibit delusions of grandeur, some of persecution, some of a religious significance and reference, some with regard to sex and love, and others merely develop a delirium of reference and interpretation? Certainly, whatever the hypothetical factors of structural change, the experience of the individual, his thwartings and balkings, his unsatisfied longings and desires, his repressions and habits of emotional expression are as much the bases on which the individual picture of abnormality develops. The whole matter is, as we have said, another instance of trying to separate, in thought and in symbol, what does not exist separately in the actual situation.

In short, it is probably wiser to not attempt to classify abnormalities of personality on this basis of structure versus function as a cause or explanation, but to treat such disturbances on a wider platform of investigation which takes into account the *status quo* in each instance, whether "physical" or "mental," treating each symptom with proper means and resolving the disturbance, if it can be resolved, as what it really is, a disturbance of the personality as an integrated unit which cannot be separated, except in theoretical words, into smaller divisions. Incidently, even if the physical factor of an abnormal personality situation be changed, there is no guarantee that the personality adjustment as a whole will be changed, any more than *vice versa*. The personality is a unit, and must be both understood and treated in practice and theory as such, else we attain only to speculative and inapplicable knowledge or pseudo-knowledge of its nature and manipulation.

Referring to and paralleling an earlier argument, we most certainly do not come into the world with any of the major personality disturbances, and it is hence true, as we have shown with reference to other matters, that it is the effect of experience and environment, working on the inherited structure we possess, which produces the final results exhibited in conduct. In so far as this is a general psychological truth, it allows for both structure and experience, and provided we do not, on the basis of this generalization, again seek refuge for our theories in the assumption of a too shadowy and too all-inclusive concept of a "psychopathic" inheritance which carries wrapped up in it all the seeds of later disability, we will be on safe grounds both theoretically and practically. Certainly, if we are interested in pushing certain considerations we can, (if we neglect others), make out a decent verbal case for the major importance of either the inherited or

acquired "physical," i.e., structural factor in personality disturbances, or for that of the "mental" experimental, conditioning factor whereby drives and their expression have become stereotyped according to inadequate patterns of response. But, as we have said, it is certainly wiser, until such time as there is far more known about the causation of personality disturbances, and the relative part disease and injury as contrasted with improper experience and thwarted and balked drives play, to avoid final theories. In a sense, improper conditionings, in the form of inadequate patterns of response may themselves, as we have indicated, be conceived of as injuries, so that the argument constantly goes about in circles.

It is, of course, unfortunate that we cannot experiment in this direction. If we could, at will, assuming public opinion and other considerations would permit it, produce the physical disease or injury conditions which are suspected to have a causal relationship to certain personality disturbances, and having produced the disturbance, cure the physical cause and find the personality again adjusting normally, that would be another story. But, as knowledge now stands, we will be wiser to regard personality disturbances on their own merits, seeking the history in every detail of each, and perhaps, when we know infinitely more about them it will be possible to resolve this difficult but, after all, probably largely verbal antithesis.[9]

[11]

Some Illustrative Cases. Throughout the discussion of the theories of the various writers considered in Chapter I, and more particularly in Sections 3 to 10 of the present chapter, it was apparent that the problem of classification, and the related problems of the differential activity of heredity and environment, of the relative importance of physical or mental causes of a given defect, and the like, were highly complex questions, difficult if not impossible of exact solution in the present state of knowledge and, after all, probably largely a matter of verbal confusion. While this text purposely does not include case histories, for reasons stated in the introduction, it will perhaps be worth while here to consider some typical instances of personality aberrations, omitting inconsequential details and concentrating on a picture of the personality as a whole, as an individual striving for adjustment. That is, while the "cases" that follow are more or less

[9] As for Note (6). See, also, Taylor, Chs. XIV and XV, and particularly McDougall, Ch. II for lengthy discussion of "structural versus functional." See also Schlapp and Smith, Bk. I and throughout; also Stekel.

artificial in that they represent stereotyped groups of behavior items such as are frequently met with, such simplification of the actual complexities of concrete reality may make easier the further discussion and understanding of the theoretical distinctions with which we have, in recent sections, been concerned.

Consider the following collection of behavior items: an unmarried private teacher, aged some 45 years, of high intelligence (I.Q. 130), kindly, affectionate, sympathetic, but melancholy and often depressed. Father, and father's brother alcoholic, no other "suspicious" ancestry. No illnesses reported except eye-strain and headaches with no apparent cause for the latter. A year prior to the onset of her disability, she had finished with a definite assignment of work, and was obliged to leave the children she had been working with and of whom she had become very fond. She became (so she reports) disgusted with everything, sad, depressed and without interest or ambition. Then she began to be afflicted with doubts; did she make an error in mailing the right letters to the right people? Did she give the correct directions to her students? Had she advised her friend correctly about some medicine?

She began to lose weight, and developed some peculiar motor habits, such as shifting from foot to foot, rubbing her hands together constantly, showing constant anxiety in her voice and expression, looking apprehensively about her, all of which she tried to avoid doing but could not apparently control. Her fears developed further; she could not write, would not open her own letters, began to fear that there was poison scattered about, could not be sure of recent events, stated she was afraid, but could not say of what or whom, repeated questions over and over again looking for assurance but could not attain it. More fears about poison appeared, particularly at table, and she began to show signs and to make statements of religious doubts and to worry about her salvation.

This is a mild case of anxiety neurosis or at least would ordinarily be so cataloged and comes, hence, in the general group of the so-called psychoneuroses, i.e., those disorders which, as we have seen, the psychiatrical approach bases on conscious or unconscious mental processes. It can also be called a doubting neuroses because of the predominance of the element of expressed doubt in her conduct. But all this is beside our present point which is rather to present a few illustrative cases so that the disputed theories discussed above might be made clearer in terms of concrete material. What "mental" as opposed to what "physical" causes should be assigned to the causation of such conduct?

If one considers the subject's unmarried status, or her leaving the pupils she was fond of and who cared for her, is this physical or mental? Would she have developed such items of behavior as we have catalogued if she had married? Would any environment have been sufficiently good to have totally prevented their occurrence? Would a worse and a more restricted environment have resulted in still worse conduct? What significance did the alcohol of the father and uncle have, if any; and do all spinsters with alcoholic fathers and uncles develop anxiety? To ask these questions is to show their foolishness, for it is clear none of them can be categorically answered; indeed, one cannot even give an opinion that is not really a mere guess.

Still further, was there structural deterioration? If so, what was it and what was its cause in turn; disease, accident, what not? Certainly, the only fair and decently supported conclusion to which one may come on the evidence presented is that a woman of 45, because of inadequate experience and the lack of development of proper habits of objective response to the needs of life and the demands of the environment, found herself in a situation where she did not know what to do, what to say, what to believe, and that she expressed such lack of adjustment verbally, emotionally and in motor form, and that the various peculiar habits she exhibited were but outward manifestations of the same lack of adjustment. To distinguish physical causes from mental, or structural alterations from functional here has no significance except the negative one that she did not need medicine or surgery as an aid in recovery. What she did need was the further education of her personality so that it could better adjust itself to the problems of life as they have to be faced by such an individual with such and such traits and status. Her conduct, in a certain sense, was insufficiently adjustive; it was adjustive on too low and too restricted a level; in the absence of better habits and patterns of adjustment she took the one she did take; it was the determined product of heredity and experience and the experience side, if either, was more the cause, in that with what she had as an heredity basis she could have been better conditioned to adjust on a proper level.

In contrast to the above, consider a case conventionally classified as one of paranoia, though not so severe that incarceration has yet occurred. A lawyer, some 45 years old, married, with three children, is convinced that all his rivals are using unfair means to ruin his business and professional standing and success. He is a clever lawyer, undoubtedly very brilliant, with an I.Q. of some 135 to 140, has written several books and made a real

success. He has been a hard drinker, his father was also, and his grandfather; his sister has been in an institution for years, diagnosed as dementia præcox, and several of his aunts on his father's side have been called "queer." No physical disease exists so far as several examinations show, he is well preserved, strong, healthy, active and has several hobbies that he follows with pleasure. But he is obsessed with the belief that his fellow lawyers are trying to ruin him. If he meets two of them talking together he is certain they are plotting about him. If he visits another lawyer's office he is sure that, just as he came in, several conspirators went out another door. His phone is tapped, his mail opened, and supposed clients really often visit him merely in order to gain knowledge about his affairs. He threatens these other lawyers with violence, but has as yet committed none. He expresses his beliefs when questioned or assured of what seems to be a sympathetic listener, but becomes threatening and angry when ever slightly contradicted or "reasoned with." He has become physically impotent and rates sex as beneath contempt; considers himself the greatest lawyer of all time, and has other minor peculiarities.

It is useless to again ask all the questions we asked above with reference to the anxiety neurosis. It is clear that the man is incorrect, i.e., has false beliefs, but so long as these do not progress any further than they have they stamp him as a potential paranoic merely, and leave as the only possible present attitude one of watchfulness and care on the part of those related to him. What does his conduct mean? What relation has it, if any, to his drives? What thwartings have occurred? He claims that he has been deprived of his just and due rewards for brilliant work; that his failure to be elected to prominent office was due to the unfair tactics of his enemies. Is his conduct an attempt to work out, symbolically, and in terms of beliefs, this fundamental belief? Is he living in terms of fantasy, compensation, symbol and consummatory delusion? These questions cannot be further discussed here; we will return to them.

A final case will illustrate another aspect of behavior, showing traits and general orientation typically of the dementia præcox variety. A boy, some 18 years old, has been showing, for over five years, more and more marked tendencies toward seclusion and apathy, moodiness, disorderliness of person, peculiarities of appetite and sleep habits, and a fanatic religious scrupulosity, plus a development of superstitious avoidances and performances. He finally is sent to an institution because he has become violent toward young girls and destructive of house furnishings wher-

ever he is, showing a special hatred of furs, curtains, bedding and rugs. In the institution he remains constantly silent, covering his eyes and ears as if subject to hallucinations (visual and auditory), sits in the same posture nearly all day and will permit no advances or communications. No syphilis can be shown to exist, though the father in addition to being alcoholic has had the disease and made an apparent recovery.

Later he comes sufficiently out of his secluded attitude to talk about his experiences, and relates tales of abnormal and perverted sexual experiences plus doubts of his religion. He again reverts and for some two years cannot be communicated with at all, and then again attains to a reasonably orientated state for a few months. Finally reverts and to date is not open to any type of communication so far as can be shown. Again, we may ask the same questions about physical and mental causes, about structural or functional behavior, about heredity and environment, but while it is freely granted, even insisted upon, that such knowledge is necessary as a part of the program for understanding any given case in its entirety, it is also equally emphatically insisted upon that, however acute our understanding of these factors, they do not give the whole story. What value, to the patient, did his secluded conduct have? What was he striving to do when he became secluded? What did his various superstitious acts, prior to his final collapse, mean symbolically and as adjustive efforts? We know that not all sons of alcoholic and syphilitic fathers have dementia præcox; we know further that not all individuals who have, themselves, acquired syphilis develop dementia præcox or general paralysis. All we know is that some do, but why the particular ones, we do not know except in very vague terms of still vaguer theory.

The reader is referred for far more detailed cases to the various psychiatric manuals mentioned in the bibliography. Here our purpose has simply been to clothe the bare bones of theory and abstract consideration with some concrete illustrations and to give a basis for a further exposition of the points we are here interested in making clear. To repeat, then; every personality, in its overt behavior, and at any moment of its career exhibits in combined and integrated form the elements of heredity and environment, of training, of disease, of good and of bad habits, of purposes and striving, of memories and ideals, and exhibits them in the form of behavior which, when analyzed from the standpoint of the observer, has its motor, its emotional-visceral and its verbal aspects. Some of this behavior, in any of the subdivisions, is so directly related to the facts and the conditions of the social and

physical environment that we call it normally adjustive and on the proper level whereas, on the other hand, some of it is so inadequately adjustive that we call it abnormal. But all conduct is adjustive, whether overtly and concretely and normally so, or whether symbolically so, in terms of substitutions, fantasy or what not. Still further, individuals combine these opposed ways of adjusting, so that in almost any individual we find traits which, were they more pronounced and more numerous, more systematized and persistent, would force us to call the whole personality abnormal. And, on the other hand, in all personalities, no matter how abnormal, are to be found at least some tiny remnants of a system of adjustments which once enabled the individual to live and move and have his being in the world of ordinary affairs. As has been frequently pointed out, the whole question of normal versus abnormal is pragmatic, and the further question of traits is equally so. We will, as has been said in several connections, return to this whole question of adjustment in terms of systems of beliefs in Part IV.[10]

[12]

Psychiatry and Personality. Rosanoff, in his recent Manual has proposed a theory of classification of abnormal personalities which has much to recommend it and which, as classification, avoids many of the difficulties we have discussed, stressing both the aspect of behavior and that of purpose, though the latter aspect is more implicit as Rosanoff develops it. In an earlier paragraph, we mentioned the terms antisocial, cyclothymic, autistic, epileptic as proposed for such a psychiatrical scheme of classification, and we will now discuss, as a summary of our treatment of personality in this chapter, the meaning and relationship of these terms. It will be noted that these terms classify trends or types of behavior rather than so-called mental disease entities or individual personality defects and are hence more inclusive than the usual categories of classification used for abnormalities in general.

By the antisocial types or group is meant that which includes, as forms of behavior, those having a narrow, too strictly individual reference; in more popular language, selfish conduct and motivation. All conduct is, of course, selfish, in the etymological sense of the term, in that what an individual does is done with reference to and as expression of the nature of that individual. No self can act but as that self; this is tautology. But there are,

[10] See Note (11) below; also Hitschmann, Hollingworth, *Functional Neuroses.* See also Section 12, Ch. III, below.

as always, gradations, relative emphases and major distinctions, and there is a type of personality which, whether because of inadequate integration of experience, inadequate reference of conduct to social and other factors, or inadequate understanding of causes and consequences, will always choose to do and to have in terms of extremely narrow, individualistic, materialistic drives and motivations. There is a certain coldness of human relationships, a lack of social insight and sympathy, a lack of compunction and conscience. The criminal, the hysterical, the pathological liar and swindler, and perhaps the paranoic belong in this group, in that their respective forms of behavior, for all the differentiating factors, bear a certain relationship to one another in terms of the descriptions as we have given it. There is also a tendency toward violence and destruction without the inhibitory abilities and habits of the normal, and a trend toward brutality.

The cyclothymic type or group, with the four sub-types, maniac, depressive, irascible and instable, is characterized by emotional change or persistence of mood without adequate overt cause and stimulus, with pronounced sensitivity, a tendency to show off, a lack of correspondence between promise and performance, a tendency to take refuge in moods as an excuse for failure, in short, a lack of correspondence between verbal, emotional and motor performances. The various sub-types will show differentiating trends, but the group as a whole is quite different from the first, and from the other two. The cyclothymic personality is relatively enduring, as compared with the autistic and epileptic, and has sufficient orientation, usually, to avoid hallucinations and delusions, but tends to blow up in moments of emotional surge, though seldom thus losing consciousness as do the epileptics or autistics, does not sleep well, dreams much and vividly and suffers from physical associated disabilities perhaps largely self-induced through suggestion, and shows what might be called, euphuistically, an histrionic trend.

The autistic group, including the præcox types, is characterized by a narrowing of the field of interest, an involution or introversion, a pre-occupation with internal, symbolic, fantastic substitutes for the events and experiences of the external environment. The individuals of this group are non-social rather than anti-social, stubborn in a passive rather than an aggressive and overt sense, suffer from hallucinations and illusions, incur mental deterioration and de-integration of traits. The epileptic is still different as a general picture, showing, on the basis of a rather permanent general personality, a recurrent transitory irritability

and instability, and often combining great or even extremely superior gifts with a tendency at times to go utterly to pieces, and to show traits quite the reverse of those ordinarily shown. Here too, is a tendency, not universal, for mental and personality deterioration with the course of time. The epileptic is often a hearty eater, a heavy sleeper and a slow and inhibited performer in response to a stimulus, shows great tenacity of purpose and an ability to be meticulous in detail.

Naturally, one cannot diagnose a given personality defect on the basis merely of this scheme; rather one might say that personality defects, as they are formed through the differential activity of heredity and environment, tend to show resemblances and general affiliations with one of these main divisions here discussed but that since, in addition, many personality defects are really mixtures and compounds, one will often find resemblances to more than one of these divisions. There are, of course, other schemes of classification, but enough has been said to make clear the difficulties involved and the inter-relatedness not only among personality disorders themselves, as such, but also as shown between the traits and integrations of normals and abnormals. Much further research is needed in all these directions, particularly as regards the heredity-environment, and the structural-functional aspects.[11]

[13]

Sleep, Suggestion and Hypnosis. We have frequently remarked that the abnormal, as distinguished from the normal personality, is merely one in which there is a greater persistence and a greater degree of abnormal traits, a lesser ability to adjust in terms of overt facts, a greater tendency to use symbolic, second-hand, fantastic means of expression or to regress, because of the non-existence or the non-activity of higher patterns, to lower, more automatic and less integrated levels of response. Every individual, at one time or another, and under given circumstances, relates himself in his conduct more closely than usual to the definitely pathological and mal or non-adjusted. Particularly is this true, in some ways and to some degrees, in the phenomena under discussion in this section: sleep, suggestion and hypnosis.

Sleep, suggestion and hypnosis are processes or conditions in which, for one reason or another, the higher patterns of integrated response are, for the time being, either less apt to function, being

[11] See Bleuler, Ch. VII; Rosanoff, Ch. XXV; Taylor, Ch. II. Also White in general, and Kempf, particularly Ch. V, with chart of proposed classification based on distortion of autonomic-affective functions. See also Ch. III, Section 12, below.

replaced with less complicated, older, simpler and lower-level patterns and integrations or to function differently than in usual and normal situations. Considering sleep first, there are many theories as to its nature and cause, the details of which do not concern us here. Roughly speaking, sleep is theoretically explained on physiological hypotheses (congestion of basal brain tissues, or the thyroid, resulting in either anemia or congestion of blood in the brain), or by chemical theories (auto-intoxication due to work and fatigue), or histologically, (change in cell relationship in the brain; increase in synapsis resistance), or biologically (as a specific reaction to darkness, an instinct, or as a protection against ensuing poisoning through toxins), or in general, as a rise in sensory thresholds, as lack of interest, as a mild periodic epilepsy without excitement, as a functioning or lack of functioning of the ductless glands, as a defense mechanism turning of attention to fantasy, and in many other ways.

The rightness or wrongness of these various competing theories need not concern us here, the major fact in which we are interested being that the higher, learned, complexly integrated patterns of response, as a matter of demonstrable fact, do not function normally in sleep, so that one might adequately define the state in such terms except that other conditions also show this characteristic and hence need to be distinguished. Incidently, the various theories above do not adequately explain the phenomena, both experiment and the consideration of general behavior of the organism during sleep showing clearly the insufficiency of the fatigue, the toxin and the other theories we have listed and fail to account for the one fact that does interest us, namely, the shifting of functioning to lower levels.

But while it is easy to criticize theories that are inadequate, it is difficult if not impossible to frame a rival theory that is satisfactory. All we know about sleep can be put in a very few words. First of all, sleep is never sleep all over; in sleep we breathe, the heart beats, the digestion proceeds, many at least of the simpler reflexes function, even a difficult posture can be maintained, and in sleep one can walk, talk, even ride horseback. Secondly, sleep ordinarily comes gradually with a period of drowsiness; it can be, within limits, delayed; is often dependent on the meeting of certain environmental conditions such as time, place and the like, or far more elaborate ritualistic ceremonies; and during sleep we can be set and ready, ordinarily, to respond to some definite stimulus quite as though we were awake all the time. To be sure, this set may not always work, but it often does with uncanny accuracy, and this would appear to mean that at

least some definite higher patterns may function even during sleep. Still further, the composition of poems or the solving of mathematical problems during sleep, or at least the having of the answer immediately upon awakening, seems to indicate still further possibilities of the functioning of higher patterns in sleep.

Yet we all sleep; if we do not we either perish or fall grievously ill. Some 90 hours of lack of sleep appears to be the limit for human beings, though even then a period of sleep of some 16 to 35% of the amount lost is sufficient to establish normality of function and health. Nor is sleep the same as the condition produced by drugs, anæsthetics and head traumas, nor yet like the state of hypnotism, though frequently loosely identified with the latter. All this we do know, and yet we know insufficient to give a complete, entirely satisfactory explanation of sleep. At best, in short, we can merely give a description of the behavior involved, with some structural facts apparently decently founded, and a brief guess at the function it plays. If we do this it appears that sleep is a peculiar and unique functioning of the nervous system, in which this neural structure is both the means and the effector. It seems as if part of the nervous system so affected other parts that the higher levels of response and the more highly integrated patterns of behavior are temporarily thrown out of commission (Hollingworth), with consequent changes of great significance in the behavior, inner and outer, of the sleeper.

Perhaps the best way to approach a study of these changes is through the phenomena of drowsiness and the alterations in perceptual and other types of behavior just prior to sleep and again just prior to awakening. Perhaps the most striking phenomena is the prevalence of images of all types, with the visual usually predominating, the basis and mechanism of which images are to be understood in terms of the discussion in the section on introspection. In short, the characteristic images of dream and sleep and of the periods of drowsiness just prior and subsequent to sleep are illusions or hallucinations in exactly the same sense as are those which occur during non-sleep behavior, being simply more universal, more persistent for the average individual, more vivid, more inter-related and more apt to be connected up with perseverating elements of the preceding periods of ordinary consciousness. This is again, as we have pointed out in other words, a connecting link between the behavior of the normal and the abnormal personality; we all have such illusions and hallucinations in dream, few of us have them when not asleep. We will again meet with these phenomena in our study of dreams, as such, in connection with a discussion of Freud in the next

chapter, but here we need merely call attention to the facts, leaving interpretation to a later moment.

But this greater development of imagery behavior is not the only characteristic sleep phenomenon; there is also a confusion of "association," i.e., of verbal and other patterns, so that words and memories of other kinds not usually active together become part and parcel of the same behavior. What we call figures of speech in the ordinary sense are a minor form of this type of mental activity; in sleep we sense resemblances and relationships that have no real or at best a very far-fetched significance. The links between the various elements of such a chain of dream-thinking are not those of logic or reality, but of fantasy, wish, purpose and illusion, plus the more sedate links of perseverating elements and the effects of what few important patterns of high order of integration remain in a functioning state because of an emotional or other basis existing just prior to sleep.

This brief description of some of the characteristics of sleep and the state of drowsiness leads naturally to a consideration of suggestion as either a type of behavior or a type of stimulus for the condition just prior to sleep is one particularly open to the production of the phenomena of this condition. Just as, in sleep proper, stimuli are erroneously perceived and reacted to, and ideas uncritically developed in terms of wish and desire and chance association, so also, in the drowsy state preceding sleep, there is an uncritical acceptance of ideas and suggestions and performance in terms thereof. By suggestion from the stimulus point of view is meant the touching off of given patterns of behavior on the basis of what would ordinarily be an insufficient stimulus; from the behavior point of view, suggestion is conduct and adjustment in terms of stimuli ordinarily insufficient to produce the responses in question. Thus, feeling a certain way, plus looking a certain way to one's self in the mirror, plus the report of a doctor may usually suffice to come to the conclusion that one is very ill, and ought to go to bed and take excellent care of the trouble. This is not suggestion, unless one supposes the physician has made an error of diagnosis. But suppose one feels normal, quite well, and in the course of a few hours several people (by pre-arrangement) make almost identical remarks about our apparent ill health. This, if it results in conduct that takes for granted the truth of such comments is suggestion. It is acting "as if" the evidence, the stimuli were what they purported to be. Another way of stating this relates the process more clearly to our discussion of dreams; thus, conduct is in terms of suggestion when and if there is neglect or inhibition of contrary

evidence and stimuli or, better stated, suggested behavior is behavior based on illogical or even non-logical grounds, with accompanying conviction (the "as if" attitude), together with the neglect or inhibition of conflicting percepts or ideas or habits or attitudes. Here is the same phenomenon met with in the thinking of the drowsy and the sleep state, namely, behavior in terms of the partial non-activity of some patterns of higher levels. In terms of suggestion, as when asleep or drowsy, we believe "as if" things were so and so, we suffer from illusion and delusion, we act in terms of beliefs that have no adequate factual foundation or reference. Suggestion occurs in terms of several factors resembling, on the whole, those we discussed in connection with sleep; perseverations, momentary lack of activity of higher inhibiting or logically controlling patterns, misinterpretation of data and precept, i.e., illusions, images and hallucinations, and partially in terms, too, of whatever higher levels remain active, often involving special needs, desires, purposes and the like. In short, like sleep, the state of suggestion is one of partial dissociation, the dissociation working down from higher to lower levels, never involving all the higher, and never involving the lower to an extent destructive to the organism, and a state of suggestion like the sleep state may be terminated by a too energetic stimulus, or the activity, for one cause or another, of some pattern antagonistic to those involved in the suggestion state. But it must not be understood that suggestion is a form of sleep, and it has, of course, many degrees, from those relatively pathological to those so frequent and so usual that they are, *ipso facto,* normal.

All the more must it be made clear that hypnotism is not a form of sleep; it has its superficial resemblances, but is really a type or degree or condition of suggestion and is not sleep, properly speaking, at all. Hypnosis, like suggestion, requires the attitude of confidence, the willingness to accept the "as if" attitude, the inactivity of higher centers except in so far as the leader in the process of behavior, the hypnotizer, directs their use and allows their functioning. Where sleep is a natural, self-induced, almost automatic process, and suggestion something that takes place constantly with everybody, hypnosis is a more complicated, deliberately induced and deliberately accepted temporary status where the phenomena of suggestion, once the hypnotic state has begun, are tremendously intensified. The higher centers are not so much inactive as active in terms of suggestions given by the experimenter, and the lower centers or levels are, much more even than in the state of suggestion, open

to manipulation and control through the stimuli of the experimenter.

The situations or stimuli which lead to hypnosis are suggestion of sleepiness on the one hand, and monotonous sounds, lights or even sudden sounds or lights on the other, or a combination, more usually, of the suggestion and the monotonous stimulus. Once in a state of hypnosis, the subject will accept suggestions that would have no appreciable effect in any other situation. Apparently even some of the autonomic processes can be influenced, insensibility to pain can be shown, stigmata can be produced and post-hypnotic suggestions, i.e., commands to do so and so a given period after awakening will be usually faithfully carried out. Hypnosis, then, is evidently not a condition merely of dissociation so much as a condition of association dependent on commands originating from without in terms of the person who induces the status through the initial suggestion and is, therefore, largely a continued and prolonged and more complex suggestion situation. Other aspects of hypnosis do not need to concern us here, such as the so-called various degrees of the state, or the limits to which suggestion in hypnosis may be carried or the peculiarities of memory shown after awakening. These aspects will be more readily treated in connection with later topics, notably in the sections on dissociation and Freud's Unconscious, and dissociated personalities. Incidently, of course, the general aspects of behavior discussed in connection with introspection, the ideo-motor theory, images, and the verbal-visceral-motor patterns of behavior should be recalled in this connection.

To summarize; we may compare sleep, suggestion and hypnosis from the point of view of the stimuli that produce each, the responses given, the bonds or structures that function and the purposes or adjustive values that each have. Thus, for sleep, the stimulus is a condition and activity of the nervous system itself, in turn due to factors which we are not clear about but which perhaps involve suggestion, habit and (Hollingworth) the vestage of a biologically useful instinct-reflex. For suggestion, the stimulus is usually the verbal or other conduct of another individual, though the individual can indulge in so-called auto-suggestion which usually, however, on analysis, can be shown to be merely indirect suggestion in the sense we have discussed. For hypnosis, the stimulus is some such hetero-situation plus, at times, physical stimuli in the form of monotonous or sudden lights or sounds or both.

As regards the behavior or response in terms of the stimuli, in sleep we have images, illusions, types of cross-reference and

association of thoughts and memories, verbal and other activities which produce the characteristic dream-pictures and situations, plus inactivity of many or all but a few higher patterns of integrated behavior. In suggestion we have the inhibition rather than the passive inactivity of some higher patterns plus, usually, a slighter degree of illusion and mis-perception, but again a characteristic "as if," believing attitude. In hypnosis this attitude of "as if" and belief, and conduct in terms of it is carried much further, and higher patterns are not so much inactive or inhibited as active in terms of definite suggestions given as stimuli, and lower patterns are also much more subject to control and modification, than in suggestion or sleep.

As regards their adjustive value, sleep is almost certainly a protective habit, whatever it was once, and is necessary to the well-being of the organism. In suggestion, once we accept the suggestion-stimulus, we can adjust and act in terms of beliefs that are, sometimes at least, helpful to attainment and achievement but which may be, of course, harmful and destructive. In hypnosis the same thing is true; in that condition, an individual can be brought to better adjustment or to one less desirable, depending on the stimuli and suggestions offered. In short, hypnosis and suggestion can be used as integrative and conditioning devices or techniques for the production of better adjustment, if and when wisely used. But to this we will again return in connection with analysis.[12]

Summary. This general chapter on the abnormal personality has endeavored to define the term, showing its essentially pragmatic and more or less arbitrary meaning and scope, and pointing out clearly the dependence of that meaning on the factors of culture, time and place in any community. Still further, it was pointed out that exact means of measurement of personality, as such, do not now exist, and in view of the fact that personality, like intelligence, which is one of its traits, cannot be measured directly in terms of structure, but only indirectly in terms of behavior, and then only in terms of sample acts of behavior reflecting this or that trait or conditioning, it was concluded that there is, at present, nothing exact in our knowledge of the subject. But, on the other hand, and as in other matters, it was also concluded that what is at present needed is more exact observation, more knowledge of the effects of environment

[12] See, on sleep, Conklin, E. S., Ch. XIV; Hollingworth, *Psychology of Thought,* Chs. II to VI; on suggestion and hypnosis, see Conklin, Ch. XII; Hollingworth, Ch. IV; Hart, pp. 125 to 153; and, in general, Bramwell, Moll, for historical details, therapeutic values and theoretical considerations. See also Taylor, Chs. XXVIII and XXIX.

on heredity, more exact knowledge of the supposed heredity factor, more and better ways of measuring what we can already measure, namely, separate traits. Still further, it was pointed out that personality is always and everywhere a unitary thing, and that all traits, whatever they may be, and whether classified, (in terms of other disciplines), as spiritual or what not, are none the less always the effect of structure in action. The doctrine of emergence merely rephrases what the theory of determinism, without which we would have no basis for psychology, has already stated in different terms.

Secondly, in the discussion of types of personality or systems of classification, it became apparent that they are all more or less relative, more or less arbitrary and more or less committed to some assumptions which may or may not be supported by the facts. In discussing psychiatry, we found the same difficulties, and made much the same criticisms as for theories of personality in general, finding particularly, as regards the earlier psychiatry, a tendency that in the present state of knowledge is a dubious one, and certainly tending toward modification in current thinking. Another, and important portion of the discussion, was the evident relationship between the so-called normal and the abnormal, the abnormal merely emphasizing and specializing in traits which, under other circumstances and conditions, and with different relationships to other traits, characterize also the normal personality. Still further, we found no evidence to show that, in the case of the abnormal personality, (ruling out those definitely deficient by inheritance), the behavior disturbances as discussed, were due to distortions of intelligence as a mechanism, but, on the other hand, very emphatically due to distortions of drives and their conditions. This is perhaps particularly apparent in the so-called psychoneuroses of mental (psychic) origin, where no disease or accident has, by definition and assumption, modified the structures which are mal-functioning, a conclusion which, followed up by a discussion once more of the significance of "mental" and "physical", again emphasized the need of considering the personality as a unit, and regarding so-called mental and so-called physical behavior traits alike as conditionings brought about by experience on the basis of heredity, neither being thought of as the cause or the effect of the other, but both being seen as types of behavior and the partial expression of a personality in action.

As remarked in the first chapter of this treatment of personality, the subject tends to present itself from a more or less general point of view, in that at present we can say more about

the personality as a whole than we can about the origin and inter-relationship of traits though, on the other hand, we can more easily show and measure the presence or absence of these unit or individual traits, so that it is now necessary to turn to a point of view more or less different and to endeavor to analyze personality and to see the origin, the growth, the disappearance and the relative significance of separate traits. This will be, in part, the business of the next chapter. It is also worth while to present the material of this chapter with reference to further developments in later sections and in anticipation of other points of view. Thus, putting it in the lowest terms, we may say that each and every personality, or, better, each and every organism, in so far as it survives at all, necessarily attains to some form of adjustment to the environment, develops some set of habits, attitudes, expressions and repressions, ways and methods of consummation and compensation; every organism, in a word, adjusts. This adjustment, however, may be of such nature, involving so many and so complicated compensations, delusions and fantasies, such peculiarities and idiosyncrasies, that we call it abnormal in its adjustment. On the other hand, the adjustment may be so free of this type of expression and behavior that, regardless of minor peculiarities, we call the personality and its adjustment normal. In between these two, however, there is another large field of inquiry and discussion, the field which will concern us, as we have already said, in Part IV, that namely, of personalities which, while still deserving, in large, the term normal, are yet so full of compensatory devices, so prone to accept substitutes, so shot with balkings and thwartings and fantastic and rationalistic substitutions for the non-consummated drives and needs that, while they are still conventionally normal, in a larger and more idealistic sense they are not.

All these three groups adjust; it is a question as to how, and in terms of what ideas, habits, and the like, the adjustment takes place; and it is a further and even more important question as to when, where and to what extent and for how long such types of adjustment will be inevitable, empirically necessary in human social living. That is, the fundamental question that the science of human behavior or, better, the science of human personality has to answer is to what degree a knowledge of the facts of human nature can bring about more desirable, more normal (in the larger sense) adjustments and consummations. But this is, as has been indicated, the problem of our final chapters.

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CHAPTER III

THE MEANING AND TECHNIQUE OF PSYCHOANALYSIS

1. The Present Disagreement of Opinion. 2. The Historical Origins. 3. Psychoanalysis, Science and Logic. 4. The Unconscious versus Dissociation. 5. Split and Multiple Personalities. 6. The Significance of Dreams. 7. Freud's Theory of Sex. 8. Psychoanalysis and Personality. 9. The Technique of Psychoanalysis. 10. Behaviorism and Psychoanalysis. 11. Personality and the Environment. 12. A Proposed New Classification of Personality. Bibliography.

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The Present Disagreement. There is perhaps no topic or theory of modern psychology or, (if even implied inclusion in the field of psychology seem to beg the questions now to be discussed), there is perhaps no topic related to modern psychology which arouses so much emotional reaction as that of psychoanalysis. Both adherents and critics seem unable to treat the matter with due decorum, to examine placidly the assumptions involved, or to come to conclusions in scientific and impartial and impersonal manner. Strangely enough, too, one finds advocates who have really little knowledge of the subject, and critics quite as fundamentally ignorant of what they are disputing. It is a curious situation and one, moreover, which has its own significance in terms of the very theory under discussion, as we shall try to establish later.

Still further, some of the critics of psychoanalysis which, incidently and purposely, we have not yet even endeavored to define, agree with and advocate much the same thing under another name, with a different nomenclature, sometimes probably better, sometimes not noticeably an improvement, sometimes perhaps worse and even more confusing. In short, that particular approach to the study of personality from a genetic, synthetic-analytic and therapeutic point of view which is here called psychoanalysis is, at present and has been for some time, in a state of almost hopeless confusion, due to misunderstandings, insufficient knowledge, prejudice and rivalry plus, finally, what may be after all one of the most important causes for the situation, namely, a tremendous public, popular interest in the matter, with resultant further confusion.

Even, however, where there is actual first-hand knowledge of the various theories and sub-theories involved in psychoanalysis, there is disagreement probably due, in this instance, to the undoubted fact that psychoanalysis, in its original form and in the hands of its original presenters, is committed to assumptions, concepts and methods which are quite opposed to those ordinarily used in psychology, still more so to those of a psychology which aims to be scientific, and particularly to those used generally in the physical sciences. In fact, recalling the early discussion in the opening chapter of this book, it is only fair to say that psychoanalysis, in its original form, is a highly speculative philosophy rather than a science either social or physical and, being such a philosophy, it attains more of a verbal completeness and consistency than real classification and objective orientation.

All this should surely be sufficiently independent of suspected undue affiliations with dubious Freudian or Jungian doctrines to serve as the basis for a reasonably impartial investigation of the facts in the case and as a basis, further, for the understanding of a position which (when supported by reasons and evidence as our discussion proceeds), might be stated thus: psychoanalysis, as a system of practices and theories can be, when revised in accord with the present more scientific knowledge we have of human nature and human behavior, a dynamic-evolutionary theory of personality, plus a practical therapy of cure and prevention of personality abnormalities. That is, when the claims of psychoanalysis, as fact and as theory, have been critically examined, and some of its main conclusions restated in terms of other and better founded psychological knowledge, it will remain, not as a separate and independent psychology, but as a new psychological synthesis, a new psychological approach to some of the current problems of human behavior, and the basis of a new technique. New, not so much as regards the isolated and separate facts involved, as new in its dynamic, genetic and unitary point of view in regarding the behavior of the personality, bringing into consideration, in this unified point of view, factors which have ordinarily been slighted, not known or even deliberately discounted. In order, however, to attain to the restatement of psychoanalysis which will put it in line with other knowledge of human nature it will be necessary, first, to summarize the history and growth of psychoanalysis, and then to begin the process of evaluating the various assumptions and conclusions ordinarily contained within its limits in terms of the general point of view we have been developing.

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The Historical Origins. The historical beginnings of what finally came to be called psychoanalysis (regardless of the differences existing between rival groups of analysts) are important in that they show the pragmatic origin; an origin not so much in terms of controlled research and tested hypothesis as of partial experience and chance association. It has often been said that had Freud and his associates and later pupils been psychologists (in the modern behavioristic sense) they would perhaps have produced a less popular but certainly a more valuable original contribution to the understanding of human personality. But the origin was in terms of the treatment of concrete facts and conditions needing practical attention and the explanation came later and in terms, undoubtedly, of too hastily conceived theory and too few recorded and observed facts. Incidently, the differences between Freud and his pupil-critics are also, as will be seen, largely in terms of speculation and precipitate interpretation of partial and limited material.

Roughly summarizing the origins, it is necessary to realize that a direct contribution came in the form of the line of thought from Boerhaave, at the end of the 17th century, on up through Van Sweiten, Mesmer, Bernheim and Charcot, under the latter two of whom Freud himself studied. Any one even roughly familiar with the closely-woven mixture of sense and nonsense, mysticism and empiricism, fact and theory which characterized the period covered and the theories of the men mentioned, will see the ground in which the seed of analysis took original root, later, to be sure, to be transferred to the equally dubious field of almost pure speculation. This theoretical background, with which, however, Freud did not entirely agree, though he was early convinced that the psychic factor in human affairs was of greater importance, particularly in the case of hysterical phenomena, than other schools of the time taught, and though he frequently used hypnotism as a therapeutic agent, was enriched by a more practical background of association with Breuer, and with the experiences of his own medical practice. In one particular case Breuer had found that a certain patient, a constant sufferer from undiscoverable illnesses, and characteristic of that group later to be described as those who are sick but have nothing the matter with them (i.e., no discoverable disease entities or structural difficulties), was immensely benefited by being allowed to just "talk it out" when in the state of hypnosis. Interest in this and similar cases led finally (1893-5) to the

collaboration of Breuer and Freud in two books on hysteria. These cases led, also, to the conception of "catharsis" and "conversion" and were a partial basis of the later insistent emphasis on the significance of the emotional or "affective" life. This "talking cure" in a sense, plus the other background we have summarized, became the basis of the whole latter development of the tremendously complicated and voluminous literature of "analysis," for one essential and vital and even fundamental aspect of analysis of psychoanalysis is that of verbal activity under certain forms of guidance. A still further, though much disputed thread in the development of this point of view and its associated technique, is the influence of Janet, himself a pupil of Charcot and at one time a friend of Freud, and who claims that much of Freud's later system called psychoanalysis is but a twisting and re-naming of doctrines and theories which Janet himself had originated, all this being specifically denied by Freud himself. But this particular dispute as to priority and origin of ideas is but characteristic of later disputes between Freud and his own pupils; indeed, it is hard to distinguish fact from opinion in the personal relationships quite as much as in the case of the theoretical claims.

It must, however, be kept in mind that the fact of an observed "cure" or at least, so as not to beg the question, a change of behavior on the basis of or subsequent to the "conversation," is an important element in the origin and development of the whole movement, with its subsequent failure to distinguish between introspection and objective observable behavior, and all the other mergings of things that behaviorism, in a general sense, has striven to separate, or at least clearly distinguish and define. And from Freud and his original writings and teachings, ("The Interpretation of Dreams" appearing in 1900, the "Three Contributions to Sexual Theory" in 1905, the Viennese Psychoanalytic Society being founded in 1903 with many of the later writers in the field as pupils or members), has developed in some twenty-five years, a whole new philosophy of life and interpretation of behavior. It is time criticism and reconstruction began the process of sorting and testing the value and worth, in both a theoretical and practical sense, of the whole point of view but, to revert to an earlier remark, it will not do to simply attack or deny, nor yet to embrace and enthuse.[1]

[1] See, on this much disputed point, Freud, *History, Problem of Lay Analysis;* Janet, *Principles,* particularly Pt. I; Hart, Lectures I and II.

[3]

Psychoanalysis, Science and Logic. We have, roughly, defined psychoanalysis as a theory of personality; a theory which endeavors to show the origin of personality in terms of an heredity factor, plus the integrating and modifying factors of experience, thus accounting, in terms of nature and nurture, for abnormalities and peculiarities of personality, but which goes also further in that, added to this descriptive side, there is a dynamic and a therapeutic aspect which claims to have the knowledge and the technique to modify, prevent, cure and remould personality in terms of more adequate and more biologically sound values. Still further, psychoanalysis is a social critique, in that it estimates, condemns or praises a given social code or culture in proportion as it ministers to the production of good, normal, expressive and creative personalities, and it is still further an interpreter of past social affairs, particularly as crystallized in myth, story and folk-lore, and their relationship to past and present human welfare. It will be remembered that the concluding section of the last chapter also stressed these points and referred, for further treatment, to Part IV.

All this, so far as it goes, while true, is lacking in the details which are necessary to fill in the picture and complete the definition, for to call psychoanalysis a theory of personality is not to differentiate it from other theories. Incidently, it is in the differentia that the Freudian theory is particularly prone to avoid the necessary details of the scientific method and to confuse fact with the possibility or probability. In short, much of the logic of the psychoanalytic movement is of the very type which its own teachings call dereistic, autistic, primitive, prelogical or non-logical; it is in terms of wishes, chance associations, analogy, purpose and desire rather than in terms of fact, observation, correlation, experiment and congruity with other findings. But it will better serve our present purpose, and lead to clearer understanding of analysis and its defects, if we examine some of its concepts in more detail. Thus, the concept of the censor is a purely verbal fiction; there being no observable structural basis for it, the whole matter being analogical and anthropological, metaphorical; useful, to be sure, as an analogy, but quite contrary to what seems to be the actual facts. The doctrine of catharsis, again, is most certainly, when stated in the orthodox manner, open to logical and psychological criticism, in that it also is largely a figure of speech, a way of dramatizing the behavior of the subject. The Unconscious itself is particu-

larly open to criticism, in that it is certainly not at all unconscious but, on the contrary, at least at times and under certain circumstances, very conscious indeed. The significance and interpretation of dreams is also non-logical in the scientific sense of the word logic, being "logical" in the Freudian sense alone, i.e., being in great part in terms of wish and purpose, whether conscious or "unconscious." Still further, the whole psychoanalytic point of view deals in terms of forces, powers, "freely floating energy," libido, urges that are apparently free of any structural basis, conflicts that are apparently purely "psychic," repressions that take place in terms of an unidentified entity; what is termed sublimation appears to be a "deus ex machina" summoned to solve an otherwise hopeless situation, and the mechanisms of the dream appear to belong to another world than that which biology and physiology know or the one a behavioristic psychology is endeavoring to explore and map. All this is, for the present stage of our investigation, confessedly dogmatic, but each of the above concepts will later be examined sufficiently in detail to justify the general claim made here, namely, that psychoanalysis as originally propounded is fundamentally non-scientific, and that its value, finally, will depend on such rephrasing, and such re-interpreting of its teachings, such bringing of them into the realm of S——R that they will constitute new approaches, new emphases, new syntheses in the realm of a scientifically orientated psychology. All this, however, as stated, is a dogmatic summary of the reaction from the point of view of this book, and is not intended to imply that there is nothing good, valuable or useful in the theories of the psychoanalysts; in fact, it has been definitely stated that there is much in the way of attitudes, syntheses, interpretations and therapy which is extremely valuable, once it has been transformed in accordance with better established findings. In order to sort out this material it will be best then, to consider some of the psychoanalytic concepts in more detail.[2]

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The Unconscious versus Dis-sociation. If we begin with orthodox Freudian explanations, we find that the "mind" is divided into three portions or levels; the conscious, the fore-conscious and the unconscious, sometimes called, in allied literature, the subconscious. The conscious consists of the material or stream of immediate awareness, the fore-conscious of material of which we could be aware with the proper ordinary stimulus,

[2] See, in general, Dunlap, Hamilton, McDougall, Prince, Hollingworth,

and the unconscious of material which requires extraordinary processes and stimuli, such as psychoanalysis, hypnotism, dream-states and the like, to bring into the stream or condition of awareness. Thus, for example, we are now, as readers, presumably conscious of the words and meanings of the sentences now acting as stimuli; we could become conscious, say, of the news we have recently read in the morning's papers if and when asked some pertinent questions with reference to it, but there are some "memories" or experiences which we cannot recall, even though in a sense we "know" them, because they are in the unconsciousness. They have been forced to retreat to the unconscious because of conflict, another Freudian term or mechanism; this conflict, at one time, being a conscious process or experience, and the repressed memories forming a part of the then process, but the conflict between, say, social obligations or morals and the thoughts or ideas finally repressed, led to their retreat and final more or less permanent inclusion in the unconsciousness. The unconsciousness is thus "composed" of ideas, thoughts, memories, desires, any and all psychological material, which could not be allowed, for one reason or another, free representation in ordinary, everyday consciousness. And the censor, which we have mentioned, sees to it that the repressed material remains where it has been forced to go. But, for all this, these unconscious desires or tendencies still struggle to express themselves and do actually obtain expression in one or more of several ways; thus, they find expression in dreams; in slips, errors, mistakes and forgetfulness of ordinary conduct; in mannerisms and eccentricities of every-day behavior; and in the neuroses, and other forms of abnormalities of personality behavior. Sometimes, even, the repressed material shows itself in overt conduct in terms of opposite or distantly related types of behavior; in short, the unconscious is a definite, striving, systematized mass of material which seeks constantly to overcome the resistance of the censor and to find expression but is as consistently driven back by the watchfulness of the guardian in question, often accompanied, as in the neuroses, by physical disturbances symptomatic of the struggle. On the whole, even in dreams or in the neuroses, the expression which the repressed material does achieve is in terms of symbolism, seldom direct and openly frank, as with non-repressed or non-censored material. Through psychoanalysis, in this connection a technique whereby the repressed material is made once more conscious, the wishes and desires can be harmonized with social requirements and laws, and the libido or energy of the organism "sublimated," that

is, made to drain itself off through other channels, i.e., through forms of expression which are mutually satisfactory to the personality and to society.

While we may, perhaps, admit much of this as a pictorial, dramatic representation of human behavior, very crudely and naïvely mechanistic, it must be restated in more formal manner if we are to use it as material of a scientific psychology, or as a basis for a scientific and demonstrable process of reconditioning and re-education whereby such personality traits as, say, the neuroses, may be done away with and the personality given freer opportunity, with less friction, for expression and adjustment. In the first place, recalling the general discussion of Parts I and II of this book, it will be realized that we must deal, as far as possible, directly and concretely or, at least, indirectly and theoretically through the avoidance of contradictions, in terms of structure. Thus, it must be acknowledged that, in any behavioristic treatment of the subject, all experiences have their neural basis, all memories being represented by some sort of trace—engram, neurogram, path, what not—in the nervous system as a connecting structure between receptor or receptors and effector or effectors. Still further, such traces or patterns were not, with rare exceptions, made by heredity or existent at birth, but were formed, through experience, as the organism was subjected to this or to that item of conditioning. Such substitute responses and substitute stimuli, as we have discussed them, are in terms of structure and the modifications due to actual first-hand experience in the environment. If we can reduce the Unconscious and the censor to these terms, we may then have some valuable new understandings of the intricacies of human behavior.

It will also be recalled that such modifications of the structure of the organism or such specialized modifications of the connector system result, on the occasion of further experience, in still further modifications and connections, so that experiences actually related in fact to one another for various reasons, as discussed in detail in our consideration of the problem of learning, come to be "associated," i.e., come to be part of a general neurogram related to the matter in question. Thus, one's knowledge, say, of geography comes to be more or less of a unit or system of units of knowledge and, while it is also related to other knowledge of other matters possessed by the organism, it has a peculiar specific unity of its own in the simple behavioristic sense that, given a definite geographical stimulus it is more likely, unless special circumstances or other competing or an-

tagonistic stimuli overbalance the situation, to result in a geographical response than, say, a theological or a chemical one. Thus, for example, to give as a stimulus, in any ordinary and neutral situation, the word "Columbus" is more likely to bring forth as a verbal response "America," than it is to result in "ice-cream," "differential" or "child-marriage." In short, certain groups of experiences are just that,—groups, complexes, patterns, neutral patterns on a large scale and, while it is true that all experiences of the individual are, since they are the individual's, all related in some real sense, some are more closely related, and the test is the pragmatic, behavioristic one of response.

It is also clear that certain groups of experiences and their neural bases in engrams and patterns are more closely related, as groups, than others. It is common observation that, say, mathematics, physics, chemistry and engineering are thus, as groups, more closely related than is any one of them and, say, theology, religion, art, dancing or swimming. But there is no reason other than that of the circumstances of an individual's life and experience why even such diverse groups of facts and memories as religion and mathematics might not be closely cross-associated, i.e., form a group of larger size and greater complexity than either of them, and such thinkers and writers as do converse or discuss the possible relationships of God and Number illustrate just the possibility under discussion. But ordinarily such relatively separate groups of experiences and their neural patterns of structure are not unified either because of lack of opportunity and stimulus or because of definite experience which prohibits or makes it less likely. That is, there can be either a relatively passive or a relatively active situation; the one might be called simply "non-association," the other "dis-association."

In short, we do not need such mythical or anthropomorphic entities as a censor or a conflict (unless taken more behavioristically), or repression, and certainly not an unconscious in order to sort out the facts of human personality performance, including dreams, neuroses, the errors and eccentricities of everyday behavior and the like. Simpler and more psychological explanations will suffice; explanations, moreover, which will, if not perfect, at least stick closer to the necessary basis in structure. In short, it is a matter of fact and of observation, demonstrable behavioristically through so-called association tests, that some experiences and some memories, some acts and some verbal responses are more frequently exhibited in connection with cer-

tain others and that they are never or seldom exhibited in connection with still another specified group.

If, now, we go into the matter a bit more in detail, and stress the dis-associative side rather than the mere non-associative which we have just discussed, we find a similar situation. Where some experiences and some conditionings simply have not, through mere lack of adequate merging experiences, come to be associated, others, because of definite experiences (and their neural traces) in one or another of the groups in question, come to be dynamically and purposely dis-associated, with consequent habits, on the basis of whatever conditioning pain or pleasure, desire for social approval, hope of salvation, or what not, enters in. We literally learn, when thinking of some matters, to definitely not think of other matters and if, by chance, we find ourselves so doing, we then in addition find ourselves aware of still other considerations such as the desire for social respect, or salvation, a sense of decency, the fear of consequences and other related patterns, and the connection is broken. To be sure, it is not in any sense here implied that the ideas, as ideas, do anything; the idea or thought, in whatever verbal form it is expressed, is but itself a species of response, a form of behavior, as we have already shown. We not only learn to think certain thoughts, i.e., to use certain verbalisms, but we learn to think other definite thoughts in connection with them, and we learn still further and just as definitely to not think still other thoughts in any connection whatsoever. While we have put this in terms of that particular type of response called words, it can also be put in terms of motor reactions, emotional reactions, or any type of reaction that the organism indulges in, involving any and all effectors, receptors or connectors, of one or the other nervous system or both. Thus, speaking in general motor terms, we definitely learn certain acts, and we learn, too, to preface or supplement or accompany (i.e., associate) these acts with certain others when we do them, and we also learn not to do still other acts in any situation or to allow others to do them, in our presence, or to have any traffic with them. To be sure this is a perhaps too unqualified statement; it might better be put that that is the effort we make, in which we sometimes succeed, sometimes fail, but which we usually try to do if that has been the particular training and conditioning we have had.

Under certain conditions, namely, the effect of fatigue, drugs, sleep, hypnosis, extreme emotion, greater drive and appetite than usual, frequent and pronounced example, long repressed desire, pronounced and insistent stimulus, certain changes take

place in the actual condition of the neurons, in the actual relationship of patterns, some connections being broken, others perhaps facilitated, so that combinations of acts, feelings, thoughts and the like, which are impossible or improbable in the ordinary states of consciousness and the ordinary functioning of patterns or under usual bodily conditions, become more likely and more frequent. The absence of some stimuli or of some verbal or other situations and responses makes possible still others, which normally do not or cannot be exhibited. The proverb has it that when the cat's away, the mice will play, and this is a just instance of the freeing of a response to a situation by the removal of the usual inhibitory factor. If we think of the experiences of the organism, registered in neural traces and muscular and glandular patterns of reaction, as being further organized into hierarchies of patterns or a set and system of such, then what we know experimentally and physiologically of sleep and drugs and the like clearly shows that such hierarchies are broken down when the personality is subject to such conditions, the newer, the more complex and the more highly integrated patterns suffering more; the older, the more primitive and the less complicated changing less.

This may also be phrased in several other different ways; thus, speaking in terms of conditioning, we are definitely conditioned toward an object or situation by the environment, physical and social in which we live, but such conditioning may differ from some other modification or conditioning which we have received earlier or come to receive later, and it then becomes a question of which stimulus will touch us off, i.e., what situation we are in, as to what our behavior will be. When certain highly complex and socially important situations act as stimuli, the behavior which would be touched off by a simpler, less social and less moral, or less restricted situation tends to remain inactive, to exhibit itself, however, under its own appropriate conditions, such conditions existing when and where there is no likelihood of reproof, when and where social fears and inhibitions do not function, when and where fatigue, drowsiness and, consequently, poor functioning of the higher centers enter in. In short, as has been constantly emphasized, we never act in terms of a mere isolated stimulus, such as a word, a sound, a touch or a pain, nor do we ever respond in terms merely of this or that movement but, on the contrary, all human stimuli are really complex situations, and all responses are of the organism as a whole as it is conditioned to act in the situation in question. It simply becomes a question, then, of the organism being complexly enough con-

ditioned to find proper and adequate responses for any and every situation; those which would fit a simpler situation do not become exhibited when a more complex one is called for unless, again, there are abnormal conditions of fatigue, emotion, or the like. We always endeavor to fit a response, in the organic unity sense, to a situation in the light of its wholeness, its total meaning, in terms of all the conditioning we have absorbed with reference to it, and only when we have no such proper conditioning or fail, for one reason or another, to use it, do we revert to simpler and less fitting responses.

But the responses we do not give are simply that,—those we do not give; and while it is most certainly true that we may desire, in part, to act one way and yet do act another, it is equally true that, under the circumstances as a unit situation we as an integrated organism and personality also desired to act the way we did act. This is the significance of conflict, namely, that we may have needs, hungers and the like which, because of other and stronger or better conditioned hungers and needs, such as those for social approval or the fear of punishment, we do not, at the moment and in the circumstances, exhibit. But we can and do blow up and exhibit them; we can and do find situations in which, whether they be those of sleep or day-dream, selected company or isolation, we freely act out what is not ordinarily possible to act out in social situations. And to call the conditionings, the desires, the drives and the memories which we do not exhibit in behavior, the unconscious, is perfectly satisfactory so long as we do not try, at the same time, to make them conscious. If they are not conscious they are not conscious; if they are, they are; no linguistic scheme can make them both at the same time. Furthermore, as regards the unconscious from the point of view of those memories and experiences which theoretically cannot be recalled, it is again dubious if this is actually true, with perhaps some exceptions soon to be discussed. One can, if enough time and effort are put on the task and if a proper stimulus is found, recall much of what the Freudians would call the unconscious, but it cannot be proven, of course, that all material is recoverable any more than it can be proven that there is material which cannot be recovered. One can hardly be aware that one is unaware of some definite fact, except in a general or indirect sense!

We expressed a reservation above to this general statement that all past material can be recovered, and the reservation, while perhaps important, is special. It is difficult, namely, to recover, in such way as to talk about it, material that originally

was not verbalized. That is, experiences occurring prior to the acquisition of adequate language, or those occurring later in life but which, for one reason or another, were not put into terms of substitute responses or language of one kind or another, or experiences for which there are no words, cannot be recovered easily, though here, of course, and properly, it may be contended that to recover an emotional experience in terms of words is really not to recover or recall it at all and that actually, even if we cannot verbalize them, we can "relive them." But the detailed argument of these matters would, at the moment, take us too far from our main purpose, namely, the exposition of Freud's unconscious and its re-interpretation in terms of more behavioristic conceptions. Watson has argued for the substitution of "unverbalized" for "unconscious" and, with the reservations implied and expressed throughout the whole argument of this section, it is acceptable, though it is not, as we have shown, a real synonym, inasmuch as some verbalized experiences are not included in ordinary consciousness but reserved for fitting, non-censorious, non-social or other special occasions, and some non-verbalized experiences can be "acted" out, and thus adequately recalled and remembered, without words. In any event, as is always the case, words are not the thing psychology need quarrel about; the facts and their relationships are more important and so long as we deal in terms of decently substantiated conditions of fact, what we call them is more or less arbitrary, once agreement is had on the facts in question.

This long discussion of the unconscious by no means exhausts the subject, but since it is, in many ways, the most important and fundamental of Freudian concepts it deserves thought and consideration. To sum up, differently, what we have already said, we might use the words "accessible" and "inaccessible" as applied, relatively, to memories, traces, dispositions or whatever else we care to call the structural modifications due to experience and conditioning, and say that some such traces are relatively accessible and usable under ordinary circumstances, others relatively inaccessible for the various reasons already discussed; but that they may become, under other and special circumstances, more accessible, such circumstances being in terms of the details of the particular moment and situation and their relationship to the major drives of the organism, the present purposes, and the past situations in which the relatively inaccessible conditionings took place, but that there is no sharp line of distinction between the two types, and that any experience that has made a trace or left a structural modification in the

connector system can be aroused and made to show itself in behavior under the proper stimulus-situation. The writer has succeeded in aiding individuals to verbally recover events which had great significance, which had occurred ten, fifteen or more years previously, which had not been thought of since, and which had (as a basis) resulted in emotional attitudes and motor habits of importance, sometimes even interfering with proper adjustment. Such recovery of this long inactive experience (and structural traces) was brought about without recourse to dreams, hypnotism or to any other technique but that of insistence on thinking back, remembering the past, finding explanations in previous experience, and these memories or experiences, when recovered, were demonstrated, on the basis of the objective and independent evidence or written records of the past, to be true to the facts and to have actually occurred as reported.

One matter remains; that just touched on, namely, the effect of forgotten or non-associated experiences on present conduct, a subject we can discuss but briefly here but which will be considered in more detail later. In many of the instances mentioned above (a series of case histories as yet unpublished), individuals acted, over long periods of time, in terms of events and experiences which they could not (without the effort insisted on) verbally recall or which, if this phrase be objected to, they actually did not recall. This needs no unconscious to explain it; perhaps none of us can recall when and where we learned the arithmetic tables, but we continue to act in terms of that learning and conditioning; none of us can probably recall the original experience when we learned to like or dislike certain foods, certain odors, certain colors, certain traits of character, but we persist in acting in terms of the early conditioning thus produced in the far past. So with the memories in question; while they were of great or even extreme importance in the adjustment capacities of the individual whose conditionings they were, they had no special characteristics other than their empirical, conditioned incompatibility with the other thoughts, experiences and conditionings, the social backgrounds and the formulation of purpose, the likes and the dislikes, the ideals, drives and wants—in a word, the personality, at either the time of their occurrence or in terms of later experiences and conditionings. They may or may not have been, at the time of their original occurrence, particularly dwelt upon; they may or may not have had, as an accompanying element of behavior, emotional reactions such as pain, chagrin, lowered feeling of self-importance, and the like. They may or may not have been verbalized. But, since they are what they now

show themselves to be, it is clear on merely behavioristic grounds that they were not integrated into the main patterns of behavior of the personality. But in sleep or in day-dreaming, under suggestion or in hypnosis, in states of great emotional tension and expression, under peculiar conditions of stimulation, they can and do, in part, determine the behavior of the personality and, even apart from these conditions, the experiences in question may and do, in some symbolic or automatic fashion, exert their effect on the total conduct of the individual. All motor and emotional patterns, as we have shown, do not have to have a verbal parallel expression, and even if they once did, the verbal can be inhibited while the other patterns still function. Certain larger aspects of this whole matter and process of non-association and dis-association result in such severe behavior changes that they deserve separate and more detailed treatment before we follow out further implications of Freud's theory of dreams.

Naturally, in connection with this discussion of the unconscious, the sections on language and learning, on introspection, images and language, as treated in Part II, should again be consulted, for, as we have repeatedly pointed out, part of the difficulties inherent in Freud's theoretical considerations is due to the fact that a basic understanding or appreciation of the demonstrated facts and established principles of normal general behavioristic psychology is apparently lacking. Also the treatment of sleep, suggestion and hypnosis and the underlying facts of the dissociation of patterns of higher integration should be recalled here, as presented in the preceding chapter. And, as further supplementing the present discussion, the sections below on dissociated personalities and on the technique of analysis, as well as the section on psychoanalysis and personality with its criticism of Freud's theory of the neuroses, should also be consulted.[3]

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Split and Multiple Personalities. In our discussion of language and learning, and in the treatment of introspection, images and language, several fundamental conclusions were reached which have importance here for an examination of the traits, the causes and the general nature of split and multiple personalities. In the first place, it will be remembered that there are what we have called, respectively, the verbal, the visceral-emotional, and the motor patterns of response, one or all or any two of which may

[3] See particularly Dummer, Northridge, Prince, *The Unconscious,* Hollingworth, *Thought,* Hamilton, Kempf. Confer, also, the arguments and theories of Pt. II, Ch. II, Sections 8 and 9, and Pt. III, Ch. II, Section 13, and references there given.

exist with reference to a given stimulus situation, or any of which may be lacking; that no one can take the place of any other one. Touching off one, however, may and usually does result in touching off the others if and when they exist with reference to and in terms of experience concerning the same situation or stimulus. But many patterns of behavior, of whichever sub-variety, are not susceptible to ordinary stimuli, cannot easily be touched off, are relatively non-associated with other patterns more frequently used, or are even under the control of larger patterns involving inhibition, i.e., have been so conditioned that, even though once patterns of more or less active exercise, they are now relatively or even absolutely dormant or, if active, are, as we have seen in the last section, prone to exhibit themselves in terms of motor or other behavior which is symbolic and non-recognizable without careful consideration even by the personality thus behaving.

We have seen, also, that in sleep, in the state of suggestion or of hypnosis, while these things are all fundamentally different, there is still one common characteristic, namely, that the activity of some patterns of behavior, particularly those that are complex, recent and highly integrated becomes altered, sometimes being inhibited, sometimes subject to the control of the stimulus-experimenter, sometimes made to merge with other patterns that ordinarily have not functioned together. In sleep, in terms of suggestion and during hypnosis, individuals will do what they do not ordinarily do, even what they could not ordinarily do, will remember events, especially in sleep and hypnosis that they cannot ordinarily recall, and exhibit abilities unknown to the usual personality. They consummate or at least endeavor to consummate drives that are usually inhibited or to do so in new and often ordinarily forbidden ways; in short, during the status in question are quite different in personality make-up from that which their ordinary behavior would indicate. And we have seen that all these phenomena are frequent with so-called normal and so-called abnormal individuals, the distinguishing basis being made the frequency, the persistency, the complexity and the importance of such phenomena and the nature of the situations under which they are shown, as well as other considerations not under discussion at the moment.

There is also another consideration which again links the normal with the abnormal and illustrates the contention, constantly made, that abnormality is not, *per se*, anything unique, but rather a combination of traits judged in terms of pragmatic and social considerations and a lack of general adaptability to the ordinary

circumstances of social living. This is the matter of what might be called, without assuming as yet any too definite splitting, partial selves. It is notorious and open to the simplest of empirical evidence, that individuals exhibit, under diverse social and environmental situations, selves or personalities, i.e., patterns of integrated behavior and response complexes which are, for such different situations, quite different themselves. Thus, without going into such detailed treatment as to compare and list traits exhibited, drives consummated, inhibitions indulged in and verbal, visceral-emotional and motor patterns either active or non-active, it is clear that the personality which we exhibit to elders of whom we are afraid, whom we are seeking to placate, is very different from that which we exhibit to underlings whom we tease, thwart and enjoy discomforting. And the personality we exhibit in the company of a chosen few friends is also very different from that which we exhibit to strangers and superficial acquaintances. We may have many such large patterns of personality behavior, no one of which is entirely distinct from any other, but in each of which there are emphases and lacks by which still others are not characterized.

But this is not, in the usual sense, pathological. We know, when responding as a personality to one situation that we could or will exhibit a different pattern of response in another situation; or at least we can so know, though we may not, in one situation, retrospect about another in the past, or speculate about another in the future. But, unless the situation does become pathological, and again the distinction is the usual one of pragmatic and social considerations, we do not exhibit a personality which is out of touch with others we have exhibited or will exhibit. Such instances as the literary Jekyll and Hyde are perhaps, apart from the story, and its fanciful chemical-theories, near the edge of the normal; but in real life there are changes quite as startling as those of the story, and based on no other facts or conditions than those we have already enumerated, namely, the responding, in terms of different personality traits and patterns thereof, to differing situation-environments. The old saying of "street-angel, house-devil," is an instance in part; the demeanor of the office slave to his brutal boss as contrasted with the demeanor of the same individual to some one he dominates is another instance, but even with the abrupt and startling changes here involved, there is yet mutual recognition of each of the partial personalities, though this term must, as we have said, be taken in the sense indicated and not as a real or pathological splitting.

But we can go yet one step further toward the real issue of split or multiple personalities without leaving the normal. What might be called momentary emotional explosions or fits of anger or fear in which the personality, as usually exhibited, is almost completely transformed through the appearance of new traits or new combinations of traits, where inhibitions appear that have never been exhibited, or the inhibitions of a lifetime are suddenly removed, are sufficiently frequent to be called normal, and yet often severe enough to verge toward the abnormal. In such explosions the individual is not, usually, aware or even able to be aware of the change, of the contrast, and does not always remember, i.e., function in terms of the patterns of his usual self or his usual purposes and ideals and, following his return to what might be called his usual self and behavior, may be quite ignorant of what he has said, done and felt in any but the most general way. This, as we have said, is usually normal in the sense that it is wide-spread, particularly among children, that it is transitory, that it is ordinarily no more than the description we have given,—a momentary or short exhibition, under unusual circumstances, of a personality or a combination of traits that are not part of the usual individual behavior.

But if we carry this still further, we begin to approach the field of the real split personality, and perhaps such momentary exhibitions of semi-normal behavior (abnormal, however, in comparison with the usual behavior of the individual), will be the best point of departure. For, in relation to the change in personality that is exhibited in such mere explosive periods, there is usually some real, even though exaggerated hurt, thwarting or other stimulus which, while it does not in a conventional sense excuse the conduct in question, yet can be seen, by an open-minded and unprejudiced observer, as having some relationship to the conduct. But if and when such explosions occur without any apparent cause, or with causes that seem, even to sympathetic observers, as far-fetched and inadequate, or when no apparent cause can be seen at all without careful and sometimes prolonged consideration, then the situation verges further toward the abnormal and begins to take on the significance of what is called hysteria. It is again clear that purely pragmatic, social and practical considerations control the judgment as to the normality or abnormality of any given behavior, and while this has some disadvantages, in that it forbids exact and sharp classification, it also has its advantages in that it becomes apparent that abnormality is a matter of degree, a quantitative not a

qualitative designation, with consequent tremendous implications for prevention, cure, understanding and general manipulation.

Hysteria, in short, is perhaps the simplest type of behavior that is properly to be called, in even a minor sense, dis-sociation of personality or the splitting thereof, though to draw a sharp and exact and properly located line of distinction between hysteria and explosions of the sort we have just discussed, that are not properly speaking hysteria, is impossible. Hysteria, incidently, is a wide-spread type of behavior and one becoming, without any doubt, increasingly so due, in all probability, to the increasing trend toward inhibition and the increasing difficulty of proper and decent and yet socially permissible consummation of drives, as well as to the increasing complexity of the patterns and mechanisms required for adequate and satisfactory adjustment to the environment in general. Hysteria sometimes is characterized by emotional spasms of the types we have already described, though without even semi-reasonable stimulus, uncontrolled and apparently uncontrollable weeping or laughing or an alternation of the two, fits of anger, with writhing, twitching, scratching, biting, moaning and destructive tendencies, followed eventually by a return to normal and often a complete forgetfulness of the events of the excited period, though without the fatigue characteristic of the epileptic. Another form of hysteria is that called the fugue, in which individuals, for a period often lasting days and sometimes weeks, wander away, usually in terms of conflicts of one kind or another, and when they come to themselves, i.e., when the usual personality is again functioning, have complete or almost complete amnesia for the period of wandering. In such fugues there is usually sufficient orientation to converse, buy food, obtain shelter and take fairly decent care of the self, but little else. Hysteria also shows itself in motor changes, such as the so-called hysterical paralyses of portions of the body, resulting in the inability to move an arm or leg, or to speak, such paralyses differing entirely from those due to actual structural injury of muscle or nerve, and the hysterical paralytic showing, in sleep or situations of danger or when the stimulus which is the occasion of the disability is absent, normal motor ability. In short, it is again, on a large scale, the inhibition of definite patterns of behavior due to suggestion, conflict or other causes. Hysterical anesthesias of hearing, of seeing, of touch, of pain or of hunger are similar in origin and in function. In short, an hysteric individual or personality may present the picture of many diseases, of many disabilities, of many traumas, and yet, in the proper sense of the word, have none of the dis-

abilities in question, being simply hysterical. As regards the causes, the environmental situations, the psychological traumas that bring about this type of behavior as a result, in terms of course, of previous learning and habits of all kinds,—visceral-emotional, motor and verbal,—already formed, the reader is referred to the concluding section of this chapter where a general consideration of the stresses and strains, the conflicts and thwartings, the inhibitions and repressions of personality are considered with reference not merely to hysteria, but in general, with reference to normal and abnormal personality, and in terms, too, of competing and alternative types of solution as well as with reference to environmental conditions.

Even hysteria, however, is not, properly speaking, the behavior of a split or multiple personality, since the recurrent abnormal mood is transitory, is not itself a completely functioning personality with social references and purposes that require great detail of consummation; in short, is too simple and too automatic to be properly called a split personality or personality dissociation. It is, of course, related and may be the earlier sign and behavior indication of later more decided and more complete dis-sociation but, as such, is simply the sign of an inadequately functioning and integrated mass of experience, of an improperly adjusted individual, of improperly and insufficiently balanced habits and integrations, of insufficient and insufficiently complex patterns of response. And, most certainly, it is definitely pathological. Actual instances of true multiple personality are rare; perhaps not more than 50 such cases have ever been authentically examined and classified; and the cases concerning which much research has been done number much fewer yet. What we have described as hysteria, what are called fugues, obsessions, somnambulisms, compulsions, phobias, while allied to the phenomena of multiple personality, are, as we have said, too fragmentary to be considered as personality units themselves. They are, if you will, split-off fragments of a personality, improperly or insufficiently integrated experiences, drives, episodes, trends, but are not sufficiently bulky or complex, do not touch on a sufficiently large portion of the usual environment to deserve the designation reserved for more complete and complex integrations. Not even such phenomena as those of crystal gazing, automatic writing and the like, in so far as they are authentic and not mere fakes, while they certainly do involve a splitting of some aspects of personality and some elements of experience, even very complex groups of memories and abilities, have a sufficient independence and universality of adjustive abilities to be called personalities.

In short, the emphasis, as previously, is on synthesis; such episodic behavior as we have described in dealing with hysteria or as found in obsessional or compulsive behavior is insufficiently synthetic to be called personality. But if and when we find two or, in extreme cases, more than two more or less mutually exclusive groups of habits of all varieties, each sufficiently complex to be called, in some sense, synthetic, then we have definitely a multiple personality. Putting this differently, if and when an individual shows amnesia for certain periods of his life, or for certain groups of related experiences, and shows, too, apparent lack of certain trends, drives and emotions that would normally be expected in his status and environmental situation and in the light of his known past, and when, in addition, such an individual at other times remembers, i.e., functions in terms of the former inhibited or non-functioning experiences and now shows the trends and drives formerly absent and, still further, is amnesic for the first observed group of memories and habits, then there is a double synthesis, a double personality. To be sure, there will be overlapping; no one personality or synthesis will be completely lacking in all habits or all memories of the other, but each synthesis will show characteristic purposes, orientations, subpatterns and be a real personality.

The actual shift from the one to the other personality may take place infrequently, sometimes months apart, sometimes several times in one day. There is usually a change of facial expression, of bodily posture and use, of tone of voice even, and while of course the same structure is used, the patterns of use are different; while the same drives, as theoretic drives, may function, they are differently conditioned or in terms of different past experience and conditioning, act in terms of different stimuli, result in different responses, and the mechanism of consummation shows characteristic modification. One personality may be docile, quiet, retiring, puritanical, the other loud, domineering, inclined to be crude or even indecent though, as we have said, there is usually some overlapping, and one personality may be to some extent aware of the other and its traits. Such split personalities or rival syntheses may continue to exist in connection with one physical organism for years though they have, in some instances, been resolved and merged into one more integrated and better adjusted personality. But, apart from this descriptive side, it is evident, from a perusal of the literature, that not very much is known, exactly and concretely, concerning the causes of such phenomena and the relation to previous experience and to heredity. Again the reader is referred to the concluding section

of this chapter for a general discussion of the factors of personality and environmental influences as productive of shifts and types of consummation and adjustment. We do not know, in any demonstrable sense, into how many such competing personalities a given mass of individual experience may split, nor under what exact conditions, nor what precipitates each partial synthesis and its exhibition, nor what would be the normal result if such a split personality were simply to be left alone. Experiment, as usual, is impossible, except after the event, and the number of cases actually treated is few. Nor do we know the relative tendency of apparently normal personalities to be supplanted by alternates, though it is clear that, apart from the final relatively pronounced type of dis-sociation we have called split or multiple personality, there are, as we have shown, many other minor trends or indications of a situation similar to but not identical with the actual multiple personality. In dream, in sleep, in hypnosis we all show similar traits and characteristics, but these are relatively less pronounced, less stable, and do not gain supremacy, even temporarily, apart from the special situation of the stimuli producing the phenomena. It is clear again that there are no lines of demarkation between any psychological processes or types of behavior and it is clear, too, that a primary factor in all these things, whatever may be the weight properly to be given to heredity, is experience in either a positive or a negative sense. These things are, on whatever basis, learned; they are types of solution of problems of adjustment, they are ways of attending to the demands of the environment; past, present and as seen to be the probable future. In short, they are types of consummation, but are not ordinarily seen thus because they are labeled abnormal, pathological, and the like and the question, in a sense, is begged. But unless psychology can come to see human behavior in a less fragmentary sense, in a less static, less inventorial sense, it will never achieve the desired control over the human animal and his environment which can alone lead to control, cure and that manipulation of factors which has made the success of the physical sciences in their domains so phenomenal.[4]

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The Significance of Dreams. That we all at least occasionally dream, and that we all know what the term means in the ordinary

[4] See Prince, *Dis-sociation,* and the *Unconscious,* Janet, *Hysteria,* Kretschmer, for case material and general theories. See, also, Kempf, Rivers, Stekel, Frink, Hitschmann, for treatment of associated material. Confer, also, extracts in Taylor, Ch. XVI.

sense, will probably be acknowledged. Whether we all dream all the time we are asleep will be debated, and is perhaps not of great consequence to agree upon, though some individuals apparently do remember or claim to recall many more dreams than others and in much more detail. The real question is to what extent are dreams of any real significance, or to what degree is the Freudian interpretation of their significance justified? We might also put it differently, namely, to what extent can dreams be used to estimate traits of the personality, to what degree do they show or exhibit behavior which is symptomatic of past experiences of the type discussed in the last paragraph?

In the first place, in terms of the general principles of any scientific psychology, it will be acknowledged that dreams, whatever their significance or diagnostic value, are just as much the products of deterministic action and reaction of organism and environment, of situation and personality, of past patterns and present stimuli, as any other species of behavior. We do not dream in terms of chance, unless by chance we merely name our ignorance of the exact causes, but in terms of definite stimuli and situations, however hard to locate, and in terms of the equally definite conditions and conditionings of past experience. Dreams, like everything else, have a cause. Naturally, in dealing with so intimate and so personal a matter as dreams, we depend to a very considerable extent on introspection, for unless the dreamer speaks while dreaming, and acts out, in sleep-walking or pantomime, the material of his dream, we have little to go by when he awakens save his retrospective report and that, as the evidence goes, is open not merely to the usual criticism directed toward introspection and verbal reports of inner experience, but to special difficulties all its own, as we shall see. But, for all the difficulties involved, it is quite evident, on theoretical grounds at least, that dreams bear a relationship to the personality and represent its functioning when in sleep. The difficulty is to determine what relationship.

But it will probably be best, as was the case with our discussion of the unconscious, to first outline the general Freudian attitude before endeavoring to sort out what can be safely used from a behavioristic point of view. From Freud's point of view, the dream is the expression of the repressed material of the unconscious which cannot, because of this repression and the censor, be expressed in ordinary consciousness and which, even in dream (with some exceptions), must be expressed in a sort of disguise, suitable to the sensitivities of the said censor and which, usually, when recalled in waking life, becomes still further

distorted due to the continued activity of the same agency. Furthermore, the dream always expresses a wish, or perhaps it is better to say that the dream, symbolically and in terms of dream activity and experience, realizes a wish, depicts a situation as solved in terms of desire and need, "as if" it were real. To be sure, it is sometimes hard to say what the wish is, for it is not always expressed in terms of the superficial and apparent meaning of the dream; some or even most wishes are in terms of the so-called latent meaning of the dream. Still further, according to Freud, most dreams are symbolic of repressed, ungratified, sometimes infantile sexual desires or wishes, and it is hence necessary to find a meaning for the symbols used, and Freud has compiled, as have other analysts, a list of sexual symbols of two kinds, male and female, as well as a host of other symbols representative of sexual behavior.

In view of the wide-spread criticism of Freud's rather extensive and intensive sexual coloring of the unconscious and of dreams and the wishes expressed in them it is only fair to point out that one good reason why one might, *a priori,* expect to find more sexual matters in all dis-sociated and non-associated conditionings and memories (as we have defined them) would be simply that such matters as these are, *par excellence,* those with reference to which society most thoroughly and yet least sensibly disciplines and censors the individual. It is not that the sex drive is particularly fond of "unconscious" (i.e. dis-sociated) expression but quite the opposite, namely that society, for many and varied reasons, is opposed, officially and collectively, to the same expression in sex matters as is permitted in others, and has therefore created a problem that has no basis other than the social. There is really no problem of sex, but there is decidedly a problem of why there is supposed to be such a problem. Freud erred, not so much in pointing out the evident sexual reference of many dreams, as in making sex the fundamental and all-embracing factor in all behavior of the unconscious, a point which, to be sure, he has to some extent modified, but one to which the public, both amateur and professional, has not yet satisfactorily adjusted itself. But we will return, in another section, to Freud's general theory of sex, after finishing with his theory of dreams, and consider the whole matter from the point of view of the conditioning of behavior.

The dream, then, from a Freudian point of view, is an expression of behavior which is not permitted or does not permit itself, or for which there is no opportunity of expression, for whatever reasons, in ordinary everyday life. The dream compensates

for the deficiencies of the environment, expresses the repressions, satisfies the needs of the personality which life, in its more overt sense, condemns, forbids or ignores. Putting this differently, and more in the terms of another commentator (Rivers) the dream deals with a conflict, much the same as any conflict or problematic situation in every-day life, but worked out in terms of whatever patterns symbols, memories, thoughts, pictures or what not, which function at the level of sleep, in which, as we have seen, complex patterns tend to be broken up, so that the dream satisfies a wish, conflict or adjustive drive, in terms of fantasy, illusion and perseveration, rather than in terms of the facts and conditions of reality and every-day social requirements.

In order to state the matter more behavioristically, we need merely ignore any too dogmatic statements in advance about the function of the dream and simply state the facts as they appear. The dream, like other inward or non-observable experiences, takes place in terms of symbolic representative substitutes, substitute responses and stimuli and deals with much the same combination of drives and mechanisms as does ordinary fully-awake consciousness, though it uses a different form of expression, is less limited or bound by the facts of reality, and fundamentally is the same old story of the personality adjusting itself in terms of what it is and what it wants. Experimental studies of dreams bear this out, in that sleepers, all awakened from sleep by the same stimulus, report dreams in which, quite evidently, the awakening stimulus played a part, but around which the recent experiences of the dreamer and the problems, the needs, the desires, the purposes and the frustrations of the personality have woven themselves, forming, as in adult life, a personality reaction, as a whole, to the stimulus-situation in question. We can still further relate the dream to other types of daily experience, namely, to what we call illusions and hallucinations, a subject already touched on in our discussion of the abnormal personality. We saw that an individual, when deeply concerned with a given matter, highly charged with emotion concerning it, is more apt to mis-interpret stimuli, closely or even remotely related to the object in question, than when in a normal condition. This error in perception, this mis-interpretation of sense stimuli, is not due to any error of the receptor apparatus as such, but to undue readiness of certain experience traces and various patterns to go off, under the abnormal conditions. Dreams show, in this sense, much the same tendency to error; thus, the sound of an alarm clock may be interpreted, that is, mis-perceived, as one of any number of sounds, depending on all the

other factors involved, such as the interests of the dreamer, what he has just previously been dreaming, what his problems are, his repressions, thwartings and balkings, his desires and needs and the thoughts and memories perseverating from the waking state. In short, a dream, like any and all behavior of the organism, is a species of adjustment in terms of the special and limited conditions involved.

Still further, recalling our discussions of the organization in hierarchies of the traces or patterns of experience, and remembering that reflexes are on a so-called low level and the higher thought processes on the highest (with other levels in between), and that in sleep or any condition resembling it, the connections of the higher levels are the first to temporarily become deficient so that incoming afferent currents are carried through lower circuits than would be the case in a waking, normal state (resulting in treatment of them, as stimuli, different from the normal), we see further objective basis for the peculiarities of dream behavior. All these things then, namely, the lower levels of functioning, the disintegration of higher patterns, the perseverations from waking states, the needs and wants of the organism, the errors in perception and reaction, account for the wholly characteristic dream consciousness, and there is no need for the importing of any other factors, particularly any such mystical or self-sufficient agencies as those of Freud and his school, into the situation. Dreams, after all, are but an exaggeration of processes which take place also under other conditions than those of sleep though there, to be sure, they occur in their most characteristic form for most people. Indeed, even the important Freudian distinction between the latent and the manifest content or significance of the dream, is a distinction which applies equally well to many acts of ordinary life, for we do not always know, all of us, just what is the real purpose or the actual motivation of a given act or utterance; we rationalize in everyday life where we symbolize in dreams. In dream as in waking life there is always the drive, and while the mechanism may be, in the latter case, so-called logical, scientific thought or, in the former, dereistic and autistic thinking, in both instances there is the same drive toward consummation and personality adjustment, in the one case predominantly in terms of fantasy, in the other more largely in terms of reality.

As regards, also, the so-called interpretation of dreams, we must make the same criticism as with reference to the classifications or judgments of personality; dreams are apt to be "interpreted" in terms of the personality of the interpreter. And to

assign a too exclusive "meaning," whether sexual or not, to a given dream is undoubtedly to indulge in wishful thinking equally with the dreamer. A dream, to summarize this present section, is an experience in sleep, in which state established hierarchies of patterns and integrations, particularly of a high level and order or complexity have, in part at least, broken down, so that incoming stimuli are woven together with perseverating recollections and with reference to balked and thwarted cravings, and integrated on a lower level, constituting a personality adjustment at that level, both perceptual, thoughtful and impulsive. Like the conscious activities of the every-day variety, the dream concerns itself with wishes, problems, desires, conflict, intention and all that human beings ordinarily concern themselves with, in terms of what is active at the moment in the patterns of the nervous system in the condition we call sleep. Dreams, in short, are to be treated as any other species of behavior; they show nothing new, nothing peculiar, nothing, *per se*, needing any other attitude or treatment than is accorded the phenomena of waking life. That the dream picture is bizarre, that it is highly symbolic, that it shows associations of elements and past experiences that are grotesque, primitive, non-logical or fantastic, merely allies it with the phenomena of day-dreaming and illusion in general. Dreaming is, in a sense, merely another species or another level of thinking, i.e., representative, second-hand "solving" of problems or situations requiring adjustment and response, and is to be interpreted as any other form of behavior, in terms, namely of the stimuli, the patterns and the adjustments involved. Certainly there is no special significance to any dream symbol in the sense that a dream of a given situation or problem must be in terms of that symbol, and there are no universal symbols in any sense other than there are universal words, i.e., learning and conditioning have made the symbol a symbol and the word a word, i.e., itself a symbol having a certain learned significance.

As regards the future or prophetic significance of dreams, much the same thing must be said: dreams are no more prophetic than judgments in general. We may, in dream, come to conclusions which the future makes real; we may and usually do dream what the future alignment of events shows to be arrant nonsense. So, too, in waking thinking and ordinary life; we can make judgments that come true, and equally those that events prove false. To be sure, it is not only possible, but not infrequent, that events which ordinary waking life gave little attention to may become elements in a dream situation, and on the basis of this fuller dealing with germane facts, we may and

sometimes do dream truer to the facts than we openly and overtly think. But such a situation merely shows inhibition and dissociation or at least non-association, in the thinking of every-day life, shows a tendency to disregard, for one reason or another, facts and experiences which properly belong to the problem in question, and if the dream does, as is not infrequent, take into account these congruent elements, this does not mean that the dream has any mystic powers or any supernatural significance. It is again, simply, the question of the patterns of thinking and the integration of experience which enters into any given level of personality behavior.[5]

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Freud's Theory of Sex. However much we may differ, either on practical or on theoretical grounds, with Freud's general theory of sex and its place in the production of abnormal and pathological and dis-sociated behavior, at least we must acknowledge that he originated a fruitful and valuable type of research and made explicit what had, for the most part, hitherto been pronouncedly implicit. The mere initiation of detailed inquiry which he, largely, was responsible for, while it may not have substantiated his own particular and peculiar judgments, has resulted and will result in still further invaluable and fundamentally necessary information about human nature.

Recalling the facts of Part I, Ch. IV, on drives and mechanisms, it will be remembered that it was emphatically denied, on the basis of evidence and of structure, that there was such a thing as an instinct of sex. There is a sex structure, a sex hunger, a sex drive, but there is no pre-established, hereditary method or technique of satisfying it. The mechanisms for the satisfying of the sex hunger or drive are learned mechanisms, and have as great a variation, among themselves, as have the mechanisms for satisfying any other drive. The forms in which consummation of sex is achieved vary tremendously, not only as regards those the individual acquires progressively as he is more and more conditioned in this and in other directions, but also as regards those suitable to or at least used by different individuals, and there is variation, also, as regards historical time and geographical and cultural location and indoctrination. What is proper here, is improper there; what was once allowed and even required, is no longer permitted to be even suggested.

[5] Freud, *Dreams;* Rivers, Hollingworth, Stekel, Frink. The latter two are, of course, derived in part from Freud, and while they represent general Freudian tendencies, they also introduce variations and are, in no sense, critical. See, for historical treatment, Ratcliff. See also Prince, in general.

All this is, of course, neither Freudian nor psychoanalytical; it is simply empirical fact which can be verified with slight impartial observation and historical research. What Freud added may be divided into two parts, first, an historical or, better, genetic theory of the development of sex mechanisms in the individual and, secondly, (and much more doubtful), a theory of the causation of neuroticism in terms of the conditionings of the sex drive. Strictly speaking, Freud did not place as exclusive a significance on the sex drive as his too enthusiastic commentators and his equally bitter critics; he really implied that all human behavior is to be read in terms of either of two drives, the self-preservative, nutrition hunger for food and the race-preservative sex hunger. To be sure, there is not, in the beginning of the individual's career, any recognition of the function played by either the satisfaction of food hunger or sex hunger,—this comes later if it comes at all. There are, in the beginning, simply the drives and the ability to acquire conditionings and mechanisms with reference to each, in terms of the drives themselves and the conditions and stimuli-situations of the environment. Confessedly, any such simplification of the actually more complicated and incidently quite different initial situation and condition of the human organism is inadequate and must necessarily lead to error in application, but our main interest for the moment is exposition rather than criticism.

By sex, incidently, Freud meant a larger and more inclusive field of activity than is usually indicated by a too sophisticated and too narrow a sense of the word. That he perhaps stretched the word too far, is granted, but much misunderstanding would be avoided were it understood that the usual adult sense of sex is not what Freud has in mind. By sex Freud meant all behavior which is with reference to pleasing others, of either sex, all phenomena related to obtaining peoples' good opinion, all relationships of an emotional nature toward others or self, whether specifically involving the sex organs proper or not. Thus friendship, of no matter how normal or proper a kind has, for Freud, a sex aspect, and his theory can only be understood if this broad significance of the term is clearly understood. And, in connection with this sense of the word sex he postulated an energy which functions in terms of it,—the so-called "Libido," a subject we have already in part discussed in connection with Freud's general theory of personality.

To this Freud added, as has been said, a genetic theory of the development in the individual of sex manifestations, conditionings and mechanisms, the first aspect of which is his insis-

tence that sex, in the broad sense of the word, is not at all a sudden development of adolescence, but a continuously developing type of behavior from birth up, and that there are normally at least three distinguishable stages in its evolution; first, the infantile or pre-inhibitory period, secondly, the childhood or latency period, ending with puberty, and thirdly, the adult phase. The first or infantile period, extending roughly from birth to some three or four years of age, is characterized by a lack of the inhibitory effects of disgust, shame, self-consciousness, modesty and the like which are the product of much later experience, and the sex drive itself is consummated largely in terms of the pleasure attendant on the stimulation of the so-called erogenous zones, such as the anal, the urethral and oral openings and the sex organs proper together with the near-by regions. While, from an adult point of view, these sensations are to be thought of as merely though perhaps highly pleasurable, from the Freudian they are sexual in the infantile sense and the beginnings of later developments and transformations, and form, even in these early stages, definite though not usually integrated patterns of consummation. However accidental or casual such things appear to be in the infant, they are the definite beginnings of later habits and patterns which may be, depending on later conditionings, normal or abnormal. They soon come to be enjoyed for their own sake, as pleasurable experiences *per se,* and, as such, to be later joined and associated with other elements of experience. In addition to these pleasurable experiences and conditionings of erogenous zones, and further complicating the early picture, are what Freud calls the Partial Impulses (Partialtriebe), of which there are two pairs, composed each of an active and a passive impulse. One such pair is composed of the sadistic (active) and masochistic (passive) impulses, the other of the "looking" (active) and the exhibitionistic (passive) impulse. These impulses, incidentally, according to Freud, modify not merely sexual behavior, adult or adolescent, but all conduct, so that one may be relatively dominating (sadistic), or subordinating (masochistic), or be a show-off as contrasted with a looker-on in any and all the affairs of life. Other and less important details of this theory need not here concern us; the primary facts just presented will suffice to indicate in main outline this aspect of Freud's theory of sex.

Freud finds the first stage of the infant's sex behavior preeminently autoerotic, i.e., the child's own body is its first chief sex object if not indeed its only basis of early consummation. Still further, the first stages of the development of what is called,

for the boy, the Oedipus Complex, (and for the girl, the Electra Complex), are developed. Speaking in terms of the boy's conditioning, Freud means by this, that the developing male, while yet ignorant, weak, undeveloped and sexually immature, begins to form, for his mother (or other dominant female in his circle) an attachment which, while not mature or sophisticated, is none the less sexual. To be sure, even Freud acknowledges that this is an attachment of wide emotional significance and has no reference to sex in the mature or specific sense of the word in any but the most abnormal instances, but it is none the less the beginning of the formation of patterns with reference to relationships toward members of the opposite sex. Probably, too, there are laid down some of the earlier conditionings toward members of the same sex, in terms of relationships to brothers, father and other males in the environment.

The second stage, lasting approximately from the end of the first to just prior to puberty is what Freud calls the latent period of sexual development, and is so, more accurately, in only a relative sense. In so far as this period is characterized by outbreaks of definite sexual behavior, however symbolic or undeveloped, Freud claims that a neurosis or sexual abnormality is forecast. The third or final period of sexuality is that co-incident with and following upon the period of adolescence with its characteristic development of the inner and outer functionings of the sex glands and the development of the secondary sex characteristics. In and during this stage normal development supposes the attainment of an attachment to a proper member of the opposite sex, thus definitely inhibiting the former attachments for near and related and older females and also inhibiting the autoerotic or narcissistic tendencies and conditionings.

But, as a matter of fact, while this represents what might be called, in Freud's terms, a normal development of the sex mechanisms and patterns of behavior, it is not always in fact as it should be according to theory. Individuals, as it were, stick at some early stage in sex development, remaining, for various reasons and because of various competing conditionings or restrictive factors of society and environment, at either autoerotic or a homo-sexual level. With much of this, if not taken too symbolically or too dogmatically, the behaviorist can agree. As a matter of fact, as is so often the case with this sort of speculative material, and particularly so as regards Freud, the observed facts and the immediate deductions from them are not far from the mark; it is the theory and the self-consistent explanation and the further verbally speculative deductions which are most open

to criticism. If we put all this in different terms, and summarize what Freud has to say in the language we have used consistently throughout former expositions of theory, we will find the following to be roughly the case; that sex, as a drive and as a structure, is native, but that sex as a functioning activity, as a full circuit of stimulus, inter-connections and response, is a matter entirely of training and conditioning, and that such conditioning may result in bringing about, as a consummatory act and object, the use of persons of either sex, or of the individual's own body, or of any neutral object, or may, on the contrary, result in complete or at least overtly nearly complete inhibition of all sex consummation. In short, as we remarked in a previous paragraph on the same subject, the sex drive may be as diversely and as complexly conditioned as the food drive, and have as complex and as highly integrated patterns of consummation, as varied mechanisms of adjustment, as any other drive. Also, as has been pointed out, the fact that for various other reasons that do not at the moment concern us, society has placed sex consummations under more severe and more lasting restrictions and inhibitions, makes for greater diversity of expression, simply because, under such circumstances, many individuals find it necessary to satisfy the drive in terms that allow for apparent conformity, that make for apparent innocence and righteousness and that yet, in some round about way, do actually achieve at least a vicarious consummation and satisfaction.

This means, of course, that homo-sexuality, whether overt or merely latent, finding expression in dubious but permissible adjustments, as well as autoeroticism and self-objective sexual satisfaction are to be understood in terms of conditionings, experience, patterns laid down in early life and in no sense as inherited traits. That there is often a supposed or even an actual deviation in the structure or the size of the sex organs proper in no way contradicts this, for even then the abnormal pattern of consummation is merely laid down on the basis of what, had it been differently conditioned, would have made an excellent basis for normal behavior. So, too, with the various conditionings that are to be thought of as normal or abnormal in proportion as they permit or do not permit the individual to finally and properly consummate the drive of sex; such things as the so-called fetishes, the so-called ceremonies, the so-called fixations of either sex on specific types of the opposite sex,—all these, as conditionings, in so far as they do not thwart or balk a final normal attainment, are to be thought of more as peculiarities than abnormalities. The question of impotence in the male and frigidity

in the female, as further instances of acquired abnormalities, if and when structural defects do not exist, are again simply instances of learning and conditioning and therefore subject, as are the other peculiarities, to re-education and re-adjustment. All this is, of course, by no means a detailed presentation of Freud's very complex theory of the development of sex in the individual, but it will give a sufficient basis for the consideration, in the next section, of his theory of the neuroses as indicative of sexual mal-adjustment.[6]

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Psychoanalysis and Personality. We have already pointed out that psychoanalysis, whatever its faults, (and they are many), at least has, as an approach to the problems of human nature, a unified, a dynamic and a genetic point of view which places a desirable emphasis on the effects, good and bad, of past experience. To be sure, as we have seen, this point of view was too frequently expressed in terms of vague and mystical concepts which were speculatively assumed on the basis of too little observation and too sparse an accumulation of facts and came, in the long run, to seek verbal more than factual consistency. It may seem strange to say, in view of all this, that psychoanalysis has been a prolific source of discoveries, has been a tremendously powerful stimulus to the study of human nature and has made individual contributions of great merit, but this is, it would seem, a fair and balanced reaction to the field. Particularly, perhaps, in the study of personality disorders and abnormalities is this shown, for it was here that Freud pointed out that certainly some mental and personality disorders are psychic or psychological in origin, that is, have no real basis in structural disturbances of the organism, have no real cause in disease entities but, on the contrary, may themselves, at least apparently, produce disease-pictures and malfunctionings of organs or even of the whole organism. This, of course, is to again raise the whole question of the relation of the mental to the physical, as well as the structure-function controversy, which we have already discussed. Still further, he pointed out that the curious traits of behavior, the abnormal and misplaced and over-

[6] Particularly Freud, *Three Contributions,* and Pt. III of *General Introduction.* Frink, Ch. I and throughout, and Stekel, all three references, throughout, will furnish case material, showing effect of sex conditioning. See Vaerting, Bousfield, Moll, Weininger for other and broader aspects of sex, from a non-Freudian point of view. See Kempf, *Psychopathology,* particularly Chs. III and IV for structural approach to sexual behavior abnormalities. See Hamilton, Ch. VII, for comparative behavioristic treatment.

emphasized fears and other emotions, bear as adequate and as natural a relationship to the past experiences of the abnormal individual as do those traits we call normal to the different past experience of the well-balanced individual, and that abnormal behavior must be understood as a type of adjustment and a means of expression of the handicapped personality, and the abnormal traits themselves understood in terms of the inadequate and unsatisfactory environments and experiences of earlier periods of adjustment. This is the essential significance of Freud's attitude toward personality abnormalities when put into behavioristic terms.

From the Freudian point of view (again more or less transforming the linguistic expression), the neurotic or psychoneurotic personality is simply that individual whose early training has been deficient, who has formed improper habits of adjustment, who seeks satisfaction of drives in terms of conduct that is symbolic and indirect rather than realistic and direct, who has great suggestibility, i.e., accepts stimuli uncritically, who does not know, even to the extent to which the normal individual is aware, just what are the drives he is endeavoring to consummate, whose past experience has been inadequately integrated, and who tends to short-circuit at a lower less complexly conditioned level. This implies an individual who, therefore, has many non-associated or even dis-sociated, i.e., repressed, groups of experiences and memories (often highly sexual in nature), who has conflicts between personal drives and social approval, and these sufficiently important to make still further difficulties of adjustment; in short, whatever we wish to posit as an heredity basis (and this, we have seen, is a debatable matter), the abnormal personality is the product of abnormal living in the past, either remote or relatively immediate. Freud, to be sure, made distinctions which Jung modified, and which Adler transformed still further, whereby some disturbances were to be thought of particularly as the product of the past, the functioning of the (Freudian) unconscious, and others more as the result of immediate and present unsatisfactory environmental conditions, a distinction which has, perhaps, more theoretical than practical value, since we always perceive and react to the present in terms of past situations related, no matter how remotely, to it, in so far, of course, as they are integrated as patterns of behavior and not either dis-sociated or non-associated. Here again, the reader is referred back to the discussions on language and learning, the ideo-motor theory and its fundamental erroneous assumptions, the whole theory of patterns of visceral-emotional,

motor and verbal nature, to the discussions on Freud's unconscious and the whole presentation of the matter of dis-sociation and non-association, as well as to the phenomena of sleep, suggestion and hypnosis, for only with these associated matters in mind will it be possible to examine, in more detail, the Freudian theory of the causation of personality abnormalities.

First of all, Freud makes a distinction between not merely the psychoses and other personality disturbances, but in those not definitely psychotic, he makes the further distinction as between what he calls the neuroses and the psychoneuroses. The main distinction between psychoses and non-psychoses is again, of course, in some sense related to a supposed structural or organic cause on the one hand and a merely psychic cause on the other, a matter we have already discussed in detail in the preceding chapter and which need not here concern us further. Roughly speaking, Freud divides the personality disturbances as follows: the psychoses, such as dementia praecox and paranoia, with others; the neuroses, comprising neurasthenia, the anxiety neurosis and hypochondria; and the psychoneuroses, comprising anxiety-hysteria, conversion hysteria, and the obsessional or compulsion neuroses. And while Freud is particularly interested to relate the latter two groups to his theory, he is none the less insistent that his general theory also throws light on the origin and the significance of all personality disturbances, even the psychoses. In short, Freud is by no means insistent on a structural or organic factor as a cause, *par excellence,* of any type of personality abnormality, on the ground that, as we have already put it, no matter what the physical condition, the specific mental or personality picture is none the less a product of the experience of the individual, a picture of his adjustment efforts, a means of consummation and satisfaction, though Freud does not, to be sure, use this particular language.

Thus, with reference to the neuroses, and without going into detail, Freud remarks, "—the actual neuroses represent the direct somatic consequences of sexual disturbances," and points out, still further, that while they may and usually do manifest themselves partially in terms of bodily disturbances (as is also, for example, the case with hysteria), the cause is not a physical one but a psychic (psychological) one, nor is the mind, as mind, affected except in so far as the physical disturbances in turn make mental functioning different. This, too, is more the sense of Freud than the actual expression; it is difficult, at times, to be sure just what Freud does mean in terms of the language we have endeavored to consistently use in our discussion of per-

sonality disturbances and abnormalities. Thus, the anxiety-neurosis is due to insufficient, incomplete or unsatisfactory sex consummation, and is really mis-placed or displaced fear, in that it seems to refer to some external cause or situation whereas it really is in terms of an inner situation, a conflict in the field of sex. Neurasthenia, on the other hand, Freud refers to excessive sexual consummation, of the wrong type, to be sure, usually of the autoerotic, self-objective variety.

As regards the psychoneuroses, listed above, Freud offers what might be called the Libido theory, a theory which explains the psychoneuroses as the result of the blocking of proper channels of flow for the psychic energy, particularly the blocking of the sex channels, or the conflict of flows of energy through self or ego-preservative as contrasted with sex outlets. In short, it is at bottom a matter of how, where, under what conditions, with what symbolic modifications, with what biological satisfaction and with what social approval, the drives as a whole, but particularly the sex drive are consummated, to again put it in behavioristic rather than Freudian language. With Freud, it is a matter of quantity of Libido, and adequate outlets for it, with possibilities, as it were, of retaining part of the Libido, as "freely floating anxiety" and even this is, if one is fairly open-minded about the matter, not so remote from Kempf's structural theory of segmental tensions as to lose all significance, though its wording is, of course, more speculative and mystical than objective and substantial. The neuroses and psychoneuroses, in short, are substitute forms of behavior which result when normal and adequate forms of expression, particularly sexual, are not permitted. Putting this in more detail, if and when the sexual development halts at the infantile level (fixation), especially with complications of the Oedipus complex, or when there is continuous conflict between the censor (i.e., higher social patterns of inhibition) and the sex drive, or when there is regression from a poorly attained maturity to earlier levels of stages, there is also a neurosis or a psychoneurosis. In fact, Freud rather definitely states that with adequate sex development and consummation a neurosis or psychoneurosis is impossible. This, of course, is contradicted by the observed facts of the shell-shock type of personality disturbance where there is no sex element at all, but rather a conflict between patterns of social duty and those of self-preservation. In this connection it is fair to say that any drive could be made the basis of a personality disturbance if and when there was sufficient conflict between consummation and social or other inhibitions; sex is peculiar only in terms of the

social attitude toward it, which attitude is itself not due to the nature of sex as sex but to various facts and conditions of early society when woman was property and therefore taboo to those who did not own her, and particularly so to the younger males of the group. This, however, does not here concern us except as a mere fact that is in contradiction to Freud's general emphasis on sex as having significance beyond other drives.

Freud is particularly interested, so far as psychoses themselves are concerned, in the varieties or types called dementia praecox, paranoia and manic-depressive, which he lists together as the Narcissistic group. By Narcissism Freud understands a later development of the early stage of auto-eroticism which we have already described, wherein the self becomes an object of sex desire, all Libido being then turned inwardly and drained off in channels that have no reference to external objects or persons. In these psychoses the sex Libido regresses to the self, as contrasted with the regression in the psychoneuroses where it retreats to earlier experienced persons or objects, and the apathy, the delusions of grandeur and the other traits of the psychotic are to be explained on the basis of this regression of the Libido and the inflation of the Ego in terms thereof, persecutatory paranoia, for example, being a symbolic defence of the ego against homosexual impulses. But, on the whole, Freud's greatest contribution is not in this sphere of distinctly speculative explanations and interpretations of conduct, but in the larger field of his general genetic attitude and his insight into the psychological effect of early experience seen, as we have pointed out, more from the point of view of the synthetic personality than from the relatively atomistic point of view of the strict behaviorists, and also in his technique of psychoanalysis as a therapeutic method for the cure of distorted personalities, a subject to which we will turn in the next section.[7]

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The Technique of Analysis. It will not be possible here to indulge in any detailed examination of the technique of Freudian analysis, or its variations as introduced by other European theorists and practitioners, or the wider modification originating in this country for, by and large, and ignoring such variations,

[7] See Freud, *General Introduction*, Pt. III throughout, but particularly Lect. XXI. See also Frink, Chs. IV to X; McDougall, Chs. XXV to XXVIII; and, in general, Hitschmann, Janet, Kretschmer, Jelliffe, White, Stekel, Rivers, and the other Freud references. See, for critical survey and application of Freudian methods, Kempf, both references, and Hamilton, particularly Chs. VII to XII.

analysis is simply the effort to produce, from such personality pictures as we have described several times from different points of view and called abnormal, a personality or synthetic complex of traits that is, again in terms of the pragmatic standards, normal. We will meet with several new Freudian terms, particularly catharsis and transference and will need to translate these likewise into language more consistent with the facts of personality as we have found them. Putting this in a somewhat more detailed way, the object of analysis is, first, to discover the sources or occasions of the wrong conditionings, to facilitate the recall of the incidents which first led to the forming of false and inadequate adjustments or ideas which, as expressive of these, are incorrectly guiding the personality, and the values which, because of their insufficiency, lead to wasted efforts and efforts in wrong directions; and, secondly, the replacement of these incorrect, incomplete, inadequate habits, attitudes and values with those that are worth while, normal, consistent, dynamic and progressive, and that allow and facilitate adequate adjustment in the largest sense of the word. Putting this in terms of previous structural discussions, it means that analysis endeavors to ascertain the make-up of visceral-emotional, motor and verbal patterns, to measure their worth as adjustive devices and mechanisms, and to change and modify, eliminate or supplement them when and where necessary.

In actual practice, analysis proceeds in terms of a number of devices, some of which, particularly in orthodox strictly Freudian analysis, seem to have almost a magical significance, but which more careful investigation again reduces to the terms of stimuli, conditionings, situations and learning processes, in no sense different from those we have already discussed. In short, while Freudian analysis is a practical therapy of great value, its theoretical background and speculative explanatory aspects are, like much else we have examined, inconsistent, inaccurate and unscientific. But to this we will return after an examination of the elements of the technique itself. First of all, there is the so-called association method, developed particularly by Jung, the using of which requires that an individual give, in response to an oral or written stimulus in the form of a word, the first word or verbalization that "comes to mind." Usually such tests are given as a group of 100 or more words, in which may be inserted some special items designed to get specific reactions related to the individual's particular difficulties. Various types of response occur, varying in time and in character, the details of which will be considered in the last chapter of this portion of the book together

with other measuring and diagnosing devices. These responses, in terms of certain rules or concepts, theoretically give insight into the difficulties of the personality, perhaps also some clue as to their origin, and perhaps even some suggestions as to their amelioration. But it would be a mistake to state the above in any more exact or dogmatic way, for the whole process is, as will be seen, built on possibilities and probabilities, and there are no certain and exact diagnoses to be made from such association tests apart from other and corroborating material and investigations. This is in part due to the complexities involved, in part to the general artificiality of the test situation, in part to the additional fact that the specific verbal or other responses are in terms of a test-situation and not an actual concrete situation, a matter which we have already discussed in connection with intelligence tests. Furthermore, as has been seen, verbal patterns are just that,—verbal, and may or may not accurately represent motor or emotional patterns.

Secondly, use is made of autobiographical material, the individual being required to recall, sometimes as much as possible of his life, sometimes a mere outline, touching particularly on emotional and sexual situations, the whole being talked over and significant episodes carefully examined during personal consultations with the analyst. To this is added the material of diaries, if such have been kept, and whatever contributions to the history of the individual can be made by friends and relatives. Thirdly, of course, dreams are analyzed, too often, unfortunately, in terms of very arbitrary symbols, whereby to dream of this or that is to mean something quite definite, in utter disregard of the individual's experiences and the past environment of the particular personality. This, of course, militates against the possible values of dream analysis for, to put it at its worst, the analyst is very apt to find as a meaning of a dream, just about what he plans to find or what his particular conceptual attitude toward dreams make him look for. On the other hand, and apart from such forced interpretations, dreams do and can offer excellent bases for investigation of particular attitudes and values in the personality, as we have shown in a recent section.

In the course of the analysis, it is expected that what is called "transference" will take place, a typically Freudian concept, meaning that the personality being analyzed will come to take a positive (or negative) emotional tone and attitude toward the analyst, coming to see in him (if the transference is positive), the savior, the protector, the friend, the father and the wise-man and thereby placing more reliance upon him, more trust

in his wisdom and power, thus making it more likely that further discoveries resulting in eventual cure will be made. In transference, the personality being analyzed comes to depend on the analyzer, to get from him encouragement, to shift to him the fears and doubts that have afflicted him, and to acquire from him the strength that has been lacking; in a word, through the analyst, to again become a free, independent creative human being. Naturally, negative transference is just the opposite, that, namely, where the patient begins to hate instead of love, to blame instead of praise, to doubt instead of to believe, and to draw away from instead of identifying the self with the analyst. This focussing of the emotional output on the person and personality of the analyst may be quite unconscious (i.e., unacknowledged explicitly and verbally) or may be, within any degree, conscious and deliberate. In Freudian terms, this transference must be so handled and modified that these emotional offerings are neither accepted by the analyst, nor yet bluntly turned back, unanswered, to their source, but redirected and reconditioned so as to fit into the actual world of people and situations which the abnormal personality has, heretofore, ignored, feared, evaded. In short, the analyst must help to redirect the emotional flow to reality. It should be perfectly clear, however, that transference is a phenomenon met with in many situations and by no means exclusively a condition of Freudian analysis. Its fundamental significance is that of suggestion, though suggestion is categorically excluded by Freud and the orthodox school. But suggestion it is, if not verbally, then through tone of voice, through prestige of professional position, or what not and as such has, of course (as has been made clear in earlier sections), an effect on conduct, inhibiting some patterns, and encouraging others, and there is no question that, on the basis of such temporary change in behavior as suggestion makes possible, actual practice may and often does make even greater changes. In short, suggestion may be, and in analysis often is, the first step in a learning process toward the attainment of better adjustment for which there previously existed no adequate and sufficient stimulus.

In this process of examination, largely if not entirely verbal, there come situations and moments when some long repressed (dis-sociated) material comes more or less suddenly to consciousness, and the hidden causes (past conditionings) are laid bare. Then, still according to Freud, and again omitting many details, the old situation, which has been repressed, and which has been the cause of much if not all of the present abnormalities of

adjustment, is once more lived through, with all or nearly all the emotional furor of the original experience. This is, roughly, what is meant by "catharsis," namely, a more or less sudden recall, reliving and revaluation of a past experience which, hitherto, has been judged, reacted to and valued in terms of an insufficient basis of experience and an immature personality; a process, in part, also of re-directing emotional output along new lines. It is theoretically held (though our behavioristic discussions of learning would contradict it), that this reliving, at a later period, of an earlier experience, now so changes the personality that it will, as regards the experience in question, no longer operate the same way. In other words catharsis "cures" the personality of a psychic "trauma" incurred earlier in life and under circumstances which led to its being so improperly reacted to that adequate personality adjustment was impossible. Behavioristic psychology would deny any particular efficacy to a mere emotional explosion, or mere verbal recollection of an early experience, adding that certainly practice in a new attitude is as essential, and this point of view is now more emphasized in analytic writings. On the other hand, the claims of some critics that all a neurotic need do to be cured, is simply to be conditioned properly, and the old, improper, non-adjustive conditioning need not be touched, but left as it is and was, is also too one-sided.

It is perfectly clear that catharsis, as described in orthodox Freudian terms, is not correct, contradicts what is known of the learning process and makes a mystery of what structural changes are the bases of the supposed functional changes. In more substantial terms, and in agreement with earlier discussions, it is impossible to see how catharsis, as such, can have any inhibitive effect on future behavior in terms of the old visceral-emotional patterns which, in the very moment of catharsis, are given further exercise and practice. If, however, we take a wider survey of the behavior of the individual, remembering the effects of transference as discussed above, it becomes clear that such a momentary catharsis is really more than just re-living, emotionally, an experience in the past. The moment of catharsis may, and probably often does, represent not merely an emotional explosion in terms of earlier patterns, but also a process, like that which occurs in everyday life and apart from analysis, of forming new bonds in terms of whatever other memories and experiences are also occurring at the moment or are perseverating from the immediate past. To think of a past fear, while also thinking in terms of the suggestion of courage, and in terms too of new

understandings of human nature, human psychology and social standards, or even to have that fear in the sense of now fearing in terms of verbal stimuli which represent the past, is a very complex situation, structurally and as regards stimulating conditions. In short, catharsis is too simple an explanation of the facts; what is really adequate as an explanation is simply that the situation of being analyzed, plus the memories and effects of previous conferences, plus the conditionings of confidence and elation and optimism due to suggestion, plus many other factors, form a larger situation in which new conditionings are easily made. But both analyst and subject will err greatly if they expect the results of such momentary experience to carry over, as such, into other situations, particularly into old situations such as have, previously, and perhaps for a long time, been reacted to differently in terms of inhibition, in terms of the very patterns which the catharsis has, theoretically, changed. In short, what is needed, here as elsewhere, is a period of continuous practice, an opportunity for the continuous development and emphasis of the new habits and the development not merely of isolated new habits but of a whole new hierarchy of patterns, of a veritable philosophy of life. It has been pointed out that personality is an integration, and in so far as it is, the changing of just one habit, one attitude, one value, one inhibition, in view of the complicated integrations undoubtedly existing and involving it as well as the other habits of the personality, will not change the whole personality. As we have consistently pointed out, we adjust in terms of the integrated personality, not in terms of atomistic habits. Still further, the discussion on language and learning, on the ideo-motor theory and associated topics should be recalled here, for no explanation which confuses verbal with either motor or emotional-visceral conditionings or patterns will be either technically correct or practically usable.

Some analysts, though a decreasing number, also use detailed and deliberate suggestion and hypnotism though, as we have pointed out, they are emphatically non-Freudian, in any orthodox sense. But many of the schools and writers deriving from Freud advocate the use of suggestion, meaning by the term, definite and more or less dogmatic advice, so couched that it will appeal to and join on to the thoughts and attitudes of the personality undergoing a process of modification, in a word, a species of reconditioning done in terms of language and the emotional factor of transference to the analyst. On the whole, the effect of suggestion is, as would be expected, inversely correlated with the degree of prominence and strength of the habits and attitudes

which a personality already has; where there are well established integrations, conditionings and attitudes, suggestion has little effect. Hypnotism, since it too works in terms of dissociation and in the absence of well established habits, or at least in terms of their momentary lack of functioning due to the special disintegrating effects of the hypnotic condition, also amounts to conduct in terms of suggestion. But both suggestion and hypnotism evade rather than solve, even in a Freudian sense, the problem at issue, for the real problem is to enable the defective personality to re-adjust itself, not to force or persuade it to act in terms of the dictates, oral or otherwise, of another personality which is in mere temporary relationship. Both suggestion and hypnotism add, as it were, an external patch to the personality, effecting no actual re-arrangement of habits, no real change in circuits or conditionings, and therefore are purely temporary in their effects such as they are. On the whole, and again speaking in Freudian terms, an analysis is more satisfactory in proportion as the analyst is merely a stimulus for the activity, verbal and recollective, of the personality and its efforts toward re-combining, re-valuating and re-conditioning past and present experiences, and the analysis should not become, under any circumstances, a situation of judgment or of censorship on the part of the analyst. The analyst may and should question, but should answer, solve, and personally settle as little as possible. The personality being analyzed, in other words, should in a sense really do the analyzing, being kept to the task by such devices as facilitate the task without actually doing it.

In short, analysis, like other situations of life in general, is simply a situation for possible learning; analysis, like any other form of teaching, results in changes in the pupil. Where analysis differs from other teaching situations, or where it should differ is, first, in its greater expertness of preparation, its greater technical knowledge of human affairs and human nature; secondly, its greater understanding of the norms and standards of human personality and of the means whereby individuals become abnormal and come to deviate slightly or widely from the mark; thirdly, its greater ability to use proper devices for ascertaining the detailed facts of deviation, as regards their nature, their origin, their later development and their present status in the whole personality and, finally, the ability to change, through appropriate technique, the visceral, motor and verbal patterns. In short, whatever the analyst should know about Freud, he should also know all there is to be known concerning general and abnormal psychology and probably a great deal else

also, for in brief, the process of analysis is really the process of building up in an individual a whole new philosophy of life, a philosophy, incidently, not merely or even primarily of words, but also of motor and visceral patterns, for philosophy can exist as much in terms of these two latter types of patterns as in the more conventional verbal sense.[8]

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Behaviorism and Psychoanalysis. It is now time to summarize this long and detailed chapter and to indicate, in so far as is at all possible, what are the real contributions to our knowledge and control of personality as offered by psychoanalysis and to translate, as it were, such contributions into a more behavioristic language. We have, in part, here and there, already done this, but we can perhaps now attempt a summary and reinterpretation in a less detailed and broader way. Cases and case histories have been purposely omitted from the discussion, inasmuch as they frequently confuse the issue and this book, fundamentally, aims more at the attainment of a broad and all-inclusive point of view, behavioristic and scientific, rather than the details of any particular aspect of the situation, leaving to another forthcoming book the treatment of case material and the criticism of detailed analyses. Still further, however much we may agree with or disagree with the theoretical discussions and abstract concepts and systematic presentations of Freud's, Jung's or Adler's point of view, it cannot be disputed that analysis, however we define it and however we criticize it, does as a process and a type of learning-experience, often produce tremendous personality changes, from the cure of stuttering to that of impotence, from the erasing of obsessions to the freeing of the personality for creative work. And while it must also be acknowledged that some analyses, for whatever reason, result unsatisfactorily even, occasionally, somewhat disastrously, and while it may be claimed that the changes themselves, though they come after the analysis may none the less not be because of it, and might have resulted anyway because the individual had become interested in his own readjustment, it must none the less be concretely and pragmatically acknowledged on the basis of a tremendous amount of empirical evidence, that analysis does affect personality. To introduce case histories would add nothing to the attainment of the general point of view for which we are striving, and would

[8] Freud, *General Introduction;* Hamilton, Jelliffe, Rivers, McDougall, Prince, Jung, White, Kempf, Stekel. See Frink for long and detailed analyses, and Hamilton for more behavioristic brief summary of some 200 cases.

merely show that changes do occur during and subsequent to analysis. It will be better to attack the problem, as we have suggested, from a summary, behavioristic point of view and see whether the whole thing cannot be stated more objectively, more in terms of the structures and functions, and the drives and mechanisms we have already examined.

What is to be said, will be far less detailed than the orthodox Freudian interpretation and, incidently, more in accord with a generally accepted scientific attitude that explanations be, as far as possible, simple, including as little as may be in the way of new concepts and terminology and following, as far as possible, established techniques and terms. First of all, a behavioristic approach to the problem of personality acknowledges and even insists that all so-called abnormal personality traits whether they be of the slighter varieties of "nervousness," perhaps best thought of as included in the group of the psychoneuroses, or whether of the major varieties of psychoses and insanities, are all of them the functioning of structure, all of them to be read and understood in terms of heredity and environment, original nature plus the modifications due to social nurture. Secondly, that much conduct of the kinds we have just mentioned, is substitute behavior, i.e., behavior in terms of major frustrated but still indirectly functioning drives; it is mal-adjustive behavior; behavior which, because of defects in structure or defects in training has come to be the expression of the drives in question but which fails to adequately consummate them or does so only in a symbolic or in a balked or semi-balked manner.

This behavioristic statement does not commit itself to the belief in the causal efficiency of so-called psychic events, such as ideas, conscious purposes or conscious verbal expressions of intended conduct, but regards them too as items in the total expression of drives, accepting the fundamental unity of the organism and seeing all conduct as structure-in-dynamic-operation and treating so-called mental and so-called physical behavior the same way, namely, as type examples of the dynamic behavior of the whole organism. Hence wishes, in the Freudian sense, are either simply conditionings of the organism, tensions and stresses in the sense of Kempf, or else partial expressions of such drives in verbalization form and have, as verbalizations, no causative value whether "conscious" or "unconscious"; that is, the verbal expression of the "wish" is but a partial result of the more fundamental structural status, and hence may be, indeed often is, conscious. This does not preclude the proper taking into consideration of such expressed conscious wishes; indeed, we can

very often learn, as we have previously remarked, something of what the personality, the integrated organism, is striving to consummate if and when we take into consideration the verbal reports which the subject offers, not necessarily at their apparent face value, but in terms of what else we know about him and his environmental difficulties, repressions and organic needs. The incorrect estimation by a given personality of its own difficulties, the incorrect estimation of problems, values and solutions, even though they are incorrect, constitute invaluable information in estimating the whole situation in which that personality finds itself. A verbal reaction is a reaction, even though partial, and we can use and classify such reactions without falling into any difficulties about consciousness or body-mind metaphysics or introspective subtleties. If, for example, a subject reports a consistent feeling of belief of inferiority, there is little we can do without taking into consideration what "reasons" or "causes" he assigns for the basis of such a belief, and unless he is actually and deliberately lying, we have everything to gain by these reports. Indeed, it is doubtful if we could even adequately diagnose a case of inferiority feeling without some verbal report to start with, though we might come to a tentative conclusion on the basis of posture and general demeanor. Having it, however, we can check back through actual overt responses and begin to triangulate the situations which led, initially, to the abnormalities of behavior and the conscious expression of the realization of them in language, and thus form a basis for the interpolation of more adequate responses and the reconditioning of those that are largely responsible for the abnormalities. And if by the "unconscious" we mean, as indeed we should mean, either the "nonconscious"—, i.e., that which is not (though it once may have been), verbalized, i.e., included in the patterns which ordinarily function verbally, we can admit that drives can function or seek opportunities for functioning or be so ready for functioning that behavior can be actually in terms of them without any conscious realization, because of these general conditions, of just what the organism is responding to, or endeavoring to respond to, or striving to express or consummate.[9]

Freud's "unconscious-conscious," which is here definitely rejected, is thus best replaced in terms of empirical observations

[9] Here the reader will do well to recall the discussion on Language and Learning (Pt. II, Ch. II, Sect. 8) and on Language, Introspection and Images (Ibid, Sect. 9) and the sections on Sleep, Suggestion and Hypnosis (Pt. III, Ch. II, Sect. 13) as well as the preceding sections in the present chapter on the unconscious and affiliated matters, and the various references there listed.

which are sound and demonstrable, and which have adequate and equally sound biology in support of them, those namely which show that our conduct is not always or everywhere determined by the introspectively apparent motives and desires of which we are conscious, or which we verbally offer as bases but is often, particularly in just those situations which we call abnormal, directed in terms of structures and conditionings for which, at the moment or in general, there is no verbal, mental, conscious expression. This leaves mysticism to one side and simply says that not all we do is accompanied by adequate, congruent and germane verbalizations, or conscious, mental conditionings and parallel verbal responses suited to express the meaning and significance, in words, of what we are actually doing. Freud's contribution here is the genetic one, the evolutionary one, in that it claims the cause of present conduct often lies far in the distant past; the error is to assume that such causes are unconscious and yet also at the same time conscious though, as we have shown, they may, under special circumstances, such as those of sleep, dream, trance and hypnotism or even persistent and suggestive questioning, "show themselves consciously," that is, exhibit the parallel conditioned verbalization and germane linguistic aspect. There is endogenous as well as exogenous causation, and each may have or not have parallel verbal expression associated with it or symbolic of it. Much inner originating, i.e., endogenous conduct has no verbal expression; some never had any; some has lost it; some has, as parallel verbal expression, words and phrases which have little or no actual or proper relationship, except that of just occurring together on the basis of past experience.

As regards these blocked and balked drives and their consequent expression in terms of substitute behavior, Freud is right in basing their improper conditioning on experience, wrong in postulating a specific energy, the libido, as their essence, and wrong also in unduly emphasizing one specific drive or form of libido, the sexual. There is no reason, as has been already shown, why any drive might not be the basis of abnormal behavior if and when so conditioned that it expresses itself in improper form, with improper emphasis, through inadequate substitute behavior, or tends to operate without being synchronized and co-ordinated with the rest of the drives of the personality. More direct observation, and a more careful attempt to explain abnormal behavior, finds a more complex situation as a basis than merely sex repression or lack of sex expression. Nervousness is more the result of poor general adaptation where sex perhaps is also lacking,

than the actual lack of just sex itself. In short, nervousness or abnormal conduct (apart, of course, from whatever abnormalities may be based directly on structural and disease conditions and even partly there) is the result of bad adjustment, or frustrated attempts at adjustment, of consistent and persistent fruitless efforts, of an inadequate marshalling of the abilities of the personality. For example, suppose an individual finds himself confronted with a situation where his abilities forbid winning success because of greater abilities on the part of his competitors. He may do one of several things; he may short circuit on lower levels, emotionalize, refuse to acknowledge the facts, seek all sorts of round-about, hopeless and symbolic ways of showing superiority, become still more emotional, indulge in worry, anxiety and chagrin, and end up by being thoroughly demoralized, perhaps developing various diffuse, highly complex disabilities, mental and physical. Another way would be to frankly acknowledge the greater abilities of the rivals, do the best possible, hope and definitely plan for some opportunity to do better, but never lose sight of the facts or indulge in compensatory fantasy and delusion. Such an attitude would never lead to pronounced or morbid abnormalities of conduct if persevered in, though it is granted that it is by no means an ideal type of adjustment.

Naturally, the one is, in terms of our discussion of intelligence and learning, a rational, an intelligent and a balanced attitude, while the other is a hit and miss, a try and try and fail again attitude. In short, from this point of view, nervousness is not merely the result of a given experience in the past but of the inadequate present resources of the personality that has had that past experience. With an objective, open-minded attitude toward the active facts of a situation, a human being can bear much more than when, because of inadequate training, he refuses to acknowledge the facts and endeavors to circumvent them in terms of what, at bottom, are utterly futile compensatory devices and which turn out, finally, and from the viewpoint of an objective well-adjusted observer, to be the actual symptoms that justify the terms neurotic and abnormal. To respond to a problematic situation in terms merely of desire and explosive, unmodified emotional patterns, is to respond so inadequately to that problematic situation that no intelligent, rational or finally satisfactory solution will be found. If the stereotyped, abortive responses be persisted in, with a consequent continuance of the balked emotional attitude, only a symbolic, substitute form of behavior which merely in fantasy, and only apparently solves

the problem can ever be attained. To form adequate and well-functioning habits of rational mechanisms responses to all possible or at least probable situations and to have these in the service of any and all drives, urges and emotional tensions is to guard as thoroughly and consistently against becoming abnormal in personality and adjustment as is possible for the human animal. But to have, in the service of such drives and urges nothing at all in the way of good mechanisms and thinking habits is to open the personality to any and all possibilities of acquiring abnormalities on every hand. This is emphatically not a statement that means that the intelligence, as such, is a drive or can itself initiate conduct in any significant sense; it is simply just what we have previously stressed in our discussion of drives and mechanisms, in our treatment of language, learning and types of patterns, namely, that a given drive can be adequately consummated only if and when the mechanisms and conditionings, whether motor or visceral or verbal, are able to properly manipulate the organism or the environment, or both; and that habits of thought, i.e., the organization of past experience, is simply one (conditioned) basis of just such proper adjustments. To be sure, an interest in a desire for normalcy is also a tremendously important part of the procedure, but the mere desire to be normal, without the habit patterns to make it possible, is useless. To repeat, this emphatically does not mean that intelligence, no matter how acute or well trained, i.e., no matter how many good verbal habits, as such, exist, and no matter how much knowledge and past experience, however well organized, is at the disposal of the personality, can solve all conceivable problems in terms of complete satisfaction of the major drives involved, but it does mean that the non-adjustive, baffled, discouraged adjustment, with its continuous emotional explosions and the acquisition of substitute symbolic satisfactions, the fantastic in place of the real, can be avoided completely. If we can not completely consummate the drive, we can at least see that whatever degree of consummation is attained is worth while, or we can attain other satisfactions elsewhere (not sublimation), or we can change our attitude simply because of what we see and understand; in a word, we can come to normal balance in spite of difficulties and in terms of merely partial success,—if we have the right mechanisms and conditionings. And a point of view that may properly be called a "philosophy of life" is but a larger term to indicate what is meant. While intelligence does not, itself, initiate behavior, drives can be and are conditioned and consummated, in part, through verbal

experiences and verbal activity; we can learn through words, once good language habits have been established and there is a sufficient basis of direct first-hand experience with which to deal, even as we can learn through non-verbal experiences. Philosophy, as such, is but the co-ordinated, or parallel or substitute verbal expression of the organized conditionings of the personality, and without such organized co-ordinated hierarchies of conditionings, we tend to react helter-skelter, abortively, inadequately, and hence become abnormal. But here again the reader is referred to the more complete treatment of this whole "philosophy" aspect of conditioning in the chapters on the psychology of belief and their exemplification, in Part IV. It should again be emphasized that the verbal conditionings and responses which constitute a philosophy in the ordinary sense of the word do not themselves, as such, necessarily completely effect an adequate adjustment; words, whether spoken or heard do not guarantee successful consummation. It is as much the other "philosophy," i.e., the inner structural patterns, habits and the co-ordinated hierarchies of conditionings, of which the verbal is but the expression in language, which are equally at the basis of successful adjustment. In short, there is a "philosophy" of muscle and gland, of connectors and of neural patterns, as well as of language and symbol, and while each modifies the other, the motor-visceral and its organization is fundamental. Language, as we have repeatedly pointed out, like intelligence in general, is a means to an end,—is a mechanism. Language can be the medium of change in other patterns, though itself a definitely verbal pattern; in short, through language, plus sufficient other experience, one can modify and be modified in more fundamental ways. But, curiously enough, the less we need to learn through language, the more readily we can so learn. The inexperienced, needing the benefit of advice, i.e., of others' experience, can less readily use or take it than those whose equipment of first hand experience is already adequate or nearly so and who can hence, through the interaction of verbal and other patterns, add yet more to their adjustive ability.

Many abnormal personality traits are due (apart from that class theoretically based on actual physical disease or traumatic conditions), to situations for which the personality, in spite of constant exposure to them, cannot seem to find adequate response and yet cannot ignore, being thus in a more or less constant state of readiness without proper consummation and adjustment. Further, a consciously perceived tendency or desire to act which, because of other teachings and conditionings, is held to be im-

possible of consummation without guilt, even the conscious desiring of which is held to be shameful, but for which the drive, i.e., the structural basis and the segmental craving remains persistent and strong, again tends to lead to indirect response and abnormal behavior. Still further, if there is structural and postural readiness of a given kind over a long period of time without also proper opportunity for consummation, we again have a basis for abnormal behavior; abnormal, whether speaking from the point of view of the individual or the group. And all this applies, as has been said, not merely to the drive on which Freud places so much emphasis, namely, sex, but to any and all others, singly or in combinations. It is simply the fact that society, as now constituted, has placed so great a barrier on the expression of sex that so great a proportion of abnormal conduct is related to that drive; a society which placed sex on a freer basis and restricted some other drive would find its problems of abnormality allocated in terms of whatever drive was thus restricted and made difficult of consummation. In particular, as a basis for abnormal conduct, and one usually overlooked, we should consider general boredom, general lack of tonus as the result of a too specialized adaptation to a too narrow and ever more unstimulating environment. It is apparent, on the basis of general observation, that all stimuli, on the whole, lose something of their effectiveness when encountered persistently and consistently over a long period of time; such a situation leads to a general vague searching for consummations of other drives and of the drives already used but now no longer adequately stimulated in terms of the present monotonous *status quo*.

But enough has been said to show that the problem of the abnormal personality can be stated in terms of situations, responses and the structures and patterns that the organism is born with or which are the result of environmental conditionings on that original basis, and that Freud's general nomenclature and the concepts with which he deals are neither necessary nor admissible, as such, but that his major contentions of the nature of personality and the problems of conduct received through his speculations a new bent, and a new synthetic emphasis. Perhaps, on the whole, this treatment has been a bit too critical, but since the general interest in Freud has, at times and in places, tended to soften the proper behavioristic criticisms of psychoanalysis, the effort was here made to lean, if anything, to the other side. As has been said, actual analysis and cases furnish another mode of approach to the whole problem, and perhaps a better one than the verbal one we have indulged in. The writer has in preparation

a volume dealing entirely with the material of this and the preceding chapter, with many case studies, which will be issued later as a further exposition of this subject. And, after all, only first hand acquaintance with cases shows their real nature, and makes clear the behavioristic side of even the most orthodox Freudian analyses which succeed sometimes, it must be admitted, in spite of all the analysis can do.

It must, of course, be understood that the exposition of psychoanalysis and associated beliefs, theories and practices which we have presented here applies particularly to Freud and would have to be, in considerable detail, qualified in order to apply to other European thinkers allied to Freud, such as Jung, Stekel, Adler, Janet, Pfister, Ferenczi, and still more so in the instances of American or English theorists and practitioners, such as Jones, Rivers, Jelliffe, White, Brill, Kempf, Frink and a host of others. But, for all the differences in detail, the criticism we have offered would apply in general to any and all doctrines and theories deriving from Freud which had not, in terms of an objective behaviorism, already been changed, as we have shown to be the case in the instances of Hamilton and Kempf where, in a certain sense, Freud has been merely an inspiration, a stimulus, a starting point for the development of theories and practices which, while emphatically dealing with Freudian situations and Freudian problems, do so in a manner and with a basis that is in accord with an objective and scientific behaviorism.[10]

[11]

Personality and the Environment. The first three chapters of this Part III, dealing with the personality, have in the main though with initial acknowledgment of the artificiality of such treatment, considered the personality *per se,* as if it were something existing in and of itself. As a matter of fact the personality is what it is in terms of the environment quite as much as in terms of anything else, and while we have at times pointed out this reference, we have not specifically examined the environmental aspects of the total situation. It is another example of the effect of analytical treatment; what experience shows to be

[10] See particularly Hamilton, Kempf, both references, Rivers, Dunlap, Dummer, Northbridge and Ratcliff, for critical approaches and, as previously noted, for more orthodox presentation, Frink, Jelliffe, White, Rank and Sachs, Ricklin, Stekel. For treatment of sex, see, in addition to Freud, *Three Contributions,* Moll, Bousfield, Weininger, Vaerting, Hamilton. Confer Vaerting especially, with reference to sex-correlated traits, and Vaerting and Bonsfield for social reference. Confer also Note (9) and cross-references there.

a complex situation of co-ordinating and mutually inter-dependent aspects, analysis divides, singles out each such aspect and proceeds, verbally, to examine the traits and details of such an artificial element. This section, in the main, will be concerned with examining the whole situation of personality in reference to environment, physical and social, in terms of the problems that have recently engaged us, such as adjustment, normal versus abnormal, and the like.

First, it will perhaps be wise to examine, a bit closer, the meaning of the word "adjustment" particularly as regards the use made of it throughout this book. Like other loosely and frequently and popularly used words, it tends to have several meanings, sometimes not mutually reconcilable. Thus, to be specific, adjustment may have a distinctly static meaning, or an equally dynamic one, and while this distinction had not, heretofore, been explicitly made, it has, of course, been definitely and constantly implied that the meaning here intended in the use of the word, with reference to personality and personality problems, has been the more dynamic one. Adjustment can be dynamic adjustment toward, as well as static adjustment to; adjustment can lead to an automatic or semi-automatic stagnation or to a process of ever increasing and ever more involved further adjustment toward new and hitherto perhaps even unseen or unthought of goals. In short, adjustment may be the end of further effort and development or be but a step toward further conditioning and the learning of new and more complicated conditionings and mechanisms for the better attaining and consummating of drives with ever wider and wider references. Nor is this mere literature; it is the story of the efforts of the personality to achieve consummation of drives resulting, at times, in such limited and automatic and trivial and lower-level patterns of behavior, that stagnation is the only description to give it; resulting, at other times, in such successful exploitation of the resources of both endowment and environment as to deserve the description brilliant, successful, dynamic, progressive and the like; resulting, at times, in the development of patterns of behavior that are emphatically and deservedly called normal, at other times resulting in the production of behavior that is as definitely abnormal.

In this effort to achieve adjustment, and in which we all share, it depends on many factors whether we use all the resources of the environment, or of endowment, or of both; we may, at times, endeavor to use endownment and the conditionings of past experience to achieve what the environment forbids, whether socially or

physically; or we may endeavor to use what the environment, social and physical, freely offers but which, because of defects of endowment or early training, we cannot adequately and actually use. All this is, in a sense, a summary of what we have already either explicitly discussed or implicitly assumed as being understood, and it remains, now, to go a bit further into the details, particularly of the environment, both physical and social.

In the first place, it is evident, though the details are beyond our immediate interest, that the physical environment, in its simpler sense, offers barriers to achievement of which we must take cognizance. Factors, whether of climate, of food, of natural resources, of sun, moisture and the like, effectually set limits, as knowledge now goes, to the achievements and adjustments of human personality. Culture, which is but a larger name for personality, in its cumulative social aspects, is certainly in part at least in terms of these factors, and what we call social and institutional aspects of the environment again reflect, sometimes in detail, the basic aspects of these physical factors. Religion and art alike reflect, as do morals, customs, food and clothing, the limiting as well as the stimulating effects of the physical environment in its fundamental nature and, as we have already pointed out, what is normal as contrasted with what is abnormal, has its geographical and its historical aspects.

But, naturally, our primary concern from the point of view of this book is in terms of the secondary aspects of the environment, namely, the institutional and custom aspects of society, the moral and religious aspects, as the barriers which exist either in opposition to the adjustment of personality, or as aids to adjustment, depending on immediate circumstances, the personality in question, and the consummations which, in terms of drives and their previous conditionings, are at issue. From this point of view, and beginning with the very infancy of the individual and long, long before patterns of any complexity exist, there is constant and persistent production of stresses and strains between the individual organism and its social environment. Whatever the collection of traits the individual is endowed with by heredity and nature, the immediate effect of arriving in the social environment is to initiate efforts to change that endowment, to modify it, to train it to a standard and a pattern. This process of reformation, of re-education, of re-conditioning is the process we have described in detail, particularly in Part I of this book, but while it is persistent and universal it is by no means always wise, enlightened, or productive of either the desired or even reasonably good results.

This is not at all to say that such efforts to shape and pattern the young organism to certain standards are wrong, or impossible to achieve; it is simply to say that such efforts are universal, whether in primitive or in modern society, and that, so far as we can now see, they are indeed necessary efforts. It is however, definitely stated that what efforts are made are, without doubt, not the wisest, either as regards technique or as regards the standards to which the individual is expected to conform or to which efforts are made to make him conform. It is almost certainly true, while not directly demonstrable, that a life of go-as-you-please would result in less satisfactory values to individual and society alike, but to acknowledge this is not to sanction present methods or present ideals or standards. Conform to something, we apparently must; but to what, and how to achieve that conformity without sacrificing other and equally valuable traits and achievements, is the question.

Putting this in terms of mature life instead of in terms of the beginnings of life, it is to say that every individual finds himself, as regards achievement and consummation, opposed by innumerable agencies of social origin, and that his final adjustment, in the sense of the word as used above, is a compromise between what he wants, desires and strives to achieve, and what society sets as the type and limit of achievement. This is both inevitable, as said, and even desirable, the question being, what types of barrier, what types of conditionings, what limits in what directions, shall society place? As things are now, that is, in terms of the present ignorance of technique and standards, there is probably a tremendous production of adjustments of the static type, of adjustments of the abnormal and symbolic type even in the instances of individuals that are, by reasonable present standards, on the whole, normal. But when an individual achieves merely symbolic and substitute consummation it is, at least in terms of what is now known concerning personality and general health, probably not as satisfactory, for either the individual or the group, as would be a more direct and a more natural consummation and, still further, when an individual adjusts his whole personality in terms of such second-hand consummations, it is almost certainly a loss all around.

To sum all this up, it appears that the individual, in his efforts toward the achievement and consummation of native drives, or of the consummation of drives that have already been conditioned in terms of past experience, has somewhat the following choices or alternatives open to him; first, he may ignore the social aspect of patterns and achievement and, by so doing, align himself with

the delinquent and criminal, thereby probably leading to further repression, inhibition and curtailment of opportunities of achievement; secondly, he may accept such permitted or partial achievements as society allows, seeking vicarious satisfactions where there is no overt permitted adjustment, and surreptitiously indulge, with the production of fear and anxiety, in occasional more direct consummations; or thirdly, he may frankly seek almost complete vicarious and symbolic substitute consummation, in terms of either of two alternatives or in terms of a mingling of both,—namely, such symbolisms, on the one hand, as art, philosophy, mysticism and religion and, on the other, the definite personality disturbances.

In this Part III we have, in the main, been concerned with the nature of personality and with that type of personality which is called abnormal, and with an investigation of the factors which bring about such deviations, what can be done to prevent or to cure them, and what relationship they bear to the types of adjustment which society offers, though this latter aspect was merely touched upon. In Part IV, on the other hand, we will be more concerned with the social aspect of personality adjustment, with such devices as have been mentioned above, namely, art, religion and philosophy. As preliminary to this, the following chapter will briefly consider certain fundamental and general aspects of the relation of society to personality, followed by a brief summary of the experimental bases of the present knowledge of personality. But in so far as psychology is finally the science of personality, it is also emphatically the applied science of personality adjustment; and if and when psychological knowledge becomes sufficiently detailed, sufficiently profound and extensive, it will probably find itself paying as much attention to the social and physical environment, to the cage the human animal lives in, as in past days it has paid to the more speculative aspects of consciousness as such.[11]

[12]

Proposed New Classification. In this and the preceding chapter we have discussed many problems and analyzed many theories which, in their final reference, are fundamental to a theory of personality, that is, will give grounds on which aberrations and abnormalities can be classified and their relation both to one

[11] See, for treatment of the environment with reference to human nature, Huntington, Henderson, Kempf, Hamilton, and references in allied topics of succeeding chapters in Part III, as well as in Part IV. See Raup, particularly Chs. I, VII and VIII, but also throughout, for detailed treatment of "Complacency" as related to the idea of adjustment developed here.

another and to the types we call normal shown without either forcing facts to accommodate themselves to theory or ignoring facts which are contrary to the principles of the scheme. Any theoretically complete and pragmatically workable system of personality classification must take account of at least the following factors or aspects of the whole situation of an organism in relation to its environment: (1) It must take into account the physical as contrasted with the mental elements of the personality, taking these words, as well as the others we shall here collect in summary, in the sense as discussed in detail previously; (2) Heredity and environment must be considered, i.e., whatever facts concerning family history appear to bear directly or indirectly on a given problematic personality must be given due consideration; (3) The question of structure and function must be considered, again in the sense of these words as previously discussed; (4) A descriptive listing of personality traits must be balanced with a reasonably founded insight into the purpose of the conduct in question; (5) A statement of the cause(s) of the disturbance must be given in relation to the results, and what might be called, in the older language, precipitating as contrasted with fundamental causes, carefully distinguished; (6) The close relation between cause and purpose should be brought out (see discussion below); (7) The so-called conscious as related to the unconscious or better the non-associated and dis-sociated factors, must be carefully examined; (8) Drives and mechanisms must be distinguished, and the factors and situations of past and present conditioning isolated as far as possible; (9) The problem must be seen in terms of actual and attempted substitute and symbolic adjustments to real and to fantastic situations; (10) The verbal, the motor and the visceral-emotional patterns of adjustment must all be taken into consideration; (11) The conflicts, actual or fantastic, must be considered in terms of drives and mechanisms; (12) All these must be seen differentially with reference to one another, so that some estimate of what the personality is doing and what it is likely to do, i.e., what will be the probable outcome of the disturbance, may be made.

On the basis of the above considerations, the following summary and non-detailed scheme of classification or orientation is proposed, consisting of three large groups, each leading into the next, forward and backward, and each considered from four subordinate points of view which include the above twelve detailed aspects of the problem of personality in a somewhat larger way. Thus, under sub-heading (A) will be considered the social and environmental aspects of adjustment or attempted adjustment

which are, at one and the same time, directly or indirectly, both "cause" and also "purpose," i.e., they are both the situations which precipitate the disturbance, they are the factors to which the personality has found it difficult or impossible to adequately adjust, and yet they are also the very things to which, in terms of the changes of personality, the individual is symbolically or indirectly or inadequately still actually adjusting or striving to adjust. Under (B) will be considered the possible, actual or reported accidents, diseases, traumas, physical disabilities and the like which are, in a sense, not the immediate causes or involved in the immediate purposes, but are still to be properly thought of in these two senses, but more indirectly. Here, of course, heredity and the related problems we have previously discussed, enter. Under (C) will be discussed the apparent or assumed structural and functional changes which are exhibited. These changes in structure and function, directly and indirectly, push the individual to further disturbances and, in themselves, often show partial purposive adjustive efforts. Finally, under (D), we will endeavor to name the types of personality disturbance, in terms of the older nomenclature, which properly come under each of the three main headings here.

First, however, it will be best to consider, in more detail, items (6) and (7) above, namely, the questions of non-association and dis-sociation and the relations of what we have called the problem-conflict-cause, and the behavior-purpose. There is, on examination, an evident and an important relationship between the cause and the purpose or meaning of a personality disturbance, and this does not at all mean arguing in a circle, explaining one thing by another which in turn is explained by the first. Thus, to be specific, suppose the "cause" in the larger and more general sense of the word, for a given type of personality disturbance, is a sense of inferiority based on a lack of physical attractiveness and appeal, plus some item of wound, scar or disfigurement, all of which has resulted in ridicule, snubs and general shunning, and no close friends. The consequent behavior, if and when such an individual develops a disturbance of the personality and becomes unable to adequately adjust and meet the problems of the everyday social environment,—earning a living, meeting people, and all that,—will show as a purpose, though mixed with other things, an effort to get what has been denied; in short, the behavior of such a personality with such a problem will be to solve the problem one way or another; and since it cannot be realistically solved by the personality in question, or at least was not so solved, the solution and the behavior will exhibit the

original effort and purpose in symbolic, fantastic, substitute form. The drives that have been, so far as normal and usual consummation is concerned, denied fruition, will still in some sense function and seek whatever consummation can be had under the circumstances. Unless the behavior, subsequent to the balked and thwarted normal and realistic solution to a problem or situation, is seen in terms of that situation and the balked personality elements involved, such behavior is frequently if not indeed usually unintelligible to an observer. To be sure, other and related or even apparently unrelated aspects of behavior will also appear, but every effort to see the purpose and adjustive meaning of the abnormal behavior in terms of the balkings and thwartings of earlier exhibitions of the same drives and adjustive efforts will always lead to better understandings and insight and, subsequently, though this is not at the moment involved, to better efforts at helping the personality toward re-adjustment and adequate consummation.

Secondly, as regards item (7) above, it will furnish the three main headings of the system of classification, for it is here claimed that it is emphatically in terms of the degree of dissociation or non-association that we can best classify abnormalities of personality in a scale of at least theoretic units, proceeding from zero or almost zero to an almost complete or 100% shifting and replacement or, better, to a complete objectification in behavior of the usually or originally dis-sociated and normally inhibited aspects of the total personality. Putting this differently, it means that, with some individuals, at one end of the scale, there is little or no dis-sociation or non-association of any significant kind, i.e., what non-associated or dis-sociated patterns actually exist, do not appreciably affect behavior, except in dream or such normal situations. As we go toward the other end of the scale, we find a gradually increasing exhibition of behavior in terms of dis-sociated or non-associated patterns, with conflict and opposition on the part of the normal patterns of the personality in the earlier reaches of the scale, but with almost complete abandonment, as the upper reaches are attained, to behavior almost entirely in terms of the alien and anti-social patterns. As the relative size and relative activity of the group of patterns ordinarily dis-sociated or of anti-social and anti-adjustive nature in a normal sense become larger, the symbolic and anti-social behavior indulged in as substitute adjustment becomes more pronounced, so that what in the beginning of the individual's disturbance was emphatically resisted, becomes definitely and emphatically exhibited.

This can be put in another way: thus, in each and every individual, to some degree, as has been pointed out, there are patterns and forms of behavior which are not usually exhibited, which are forbidden exhibition, which meet with censure and even punishment when and if exhibited, which interfere with winning social approval and regard and which, very frequently, also are so related to and so contradict and run counter to other and better standardized drives and mechanisms of the personality that the operation of the former leads to shame, chagrin, regret, even desperation and collapse. Such patterns, if they have verbal aspects, will not be ordinarily dwelt upon, even the verbal expression in the form of musing being forbidden and subject to much the same results as more overt expression. This is, of course, merely a rough summary of previously discussed material, and is recalled here simply to make explicit the basis on which the proposed classification of personality abnormalities is to be made. With this then, as the general situation, it is clear that we can arrange personalities in terms of the degree to which the forbidden, anti-social, non-integrated and incommensurable patterns of learning and conditioning actually do, directly or indirectly, openly or symbolically, function. In proportion as conduct is in terms of socially acceptable or at least tolerable forms of activity and expression, and yet enables the individual to adjust to and consummate fundamental drives and needs, such an individual need not indulge, in any perceptible degree, in conduct that is symbolically designed to evade either the criticism and disapproval of others or of the other patterns of value which the personality itself has and which are normally in control. But it is clear that a shift may be made, when such proper consummation becomes difficult or impossible, from the one extreme to the other, and that the patterns which, in terms of our present statement, are the ones socially and as regards the higher patterns of integration forbidden, taboo and reprehensible, may become the patterns which actually dominate the organism, and the others become the less used and less dominant. This is not so much a splitting of personality as a gradual shift from one form of expression, one type of adjustment, one form of consummation, one set of values to another, and only if and when there is a shifting back and forth, plus other phenomena which we have discussed in the section on multiple personalities, is the latter designation proper, and even then it does not contradict the points made here as a basis for a classification of abnormalities, for then the individual would, in most such instances, simply be classified now at one point of the scale, now at another,

depending on which patterns were in control. But in the interests of clearness, it will be better to first present the divisions and emphases of the scale and discuss the details subsequently.

Group I. In this group are to be included, first of all, instances of very mild non-association rather than actual dis-sociation; individuals whose conduct shows a conflict between diverse patterns and values, but who are either distinctly aware and conscious of what is at issue or can easily be brought to see what is involved. There is not so much yet an actual shifting to anti-social and incongruous patterns of behavior, which, incidentally, are relatively, in this group, of small bulk and extent, as a realization of the problem whether such shift should be or should not be made. There is frank acknowledgment, either in advance or after discussion, that the difficulty is with the integrated patterns of adjustment and consummation. The problematic situations which brought on the disturbance are clearly seen to be what they really are, and the whole orientation is excellent. Little if any symbolic adjustment is made, though conduct often shows some functional disturbances. This group shades gradually into those who show some actual dis-sociation, particularly as regards small symptomatic acts, some compulsions, obsessions, phobias, more or less dis-sociated or non-associated, but with the better and more normal aspects of the personality still definitely in control and endeavoring to inhibit and re-direct the aberrant tendencies.

(A) The situations producing such minor and relatively slight disturbances might be summarized, first of all, as being (1) a general sense of inferiority, (2) a sense of injustice, pronounced shame, regret or disgust, etc., or (3) thwarted love or ambition, or (4) fear of responsibility, of criticism, of failure, in terms of a sense of self-depreciation. In the less pronounced disturbances of this group, all this will be relatively clear and objectively seen and acknowledged, leading toward less clear orientation in proportion as the disturbances shade toward the second group below, in terms of such additional and more severe causal factors, as (5) sudden discovery, on the part of others, or fear of such discovery, of vice, inability, irresponsibility, or (6) the fear of suddenly losing position, reputation, love, social esteem because of sin and failure and inadequacy, all of which, still further, as the second group is approached, are not considered openly and objectively, but inhibited and dis-sociated.

(B) Here it will often be found that claims are made as the effect of bad health, failing eye-sight, headaches, personal appearance, family reputation and history, previous diseases, indigestion

and the like, and it is probably true that these factors have an actual psychological though in no sense a necessary biological bearing on the matter. It is the individual's attitude toward these things rather than the things themselves which counts.

(C) Functional rather than definitely structural changes will be observed, particularly pronounced in those cases which shade toward the extremes of this group and approach close to the next. The milder instances will show simply decreased ability to work, to function in general, to play or enjoy social life, a certain degree of preoccupation and absent-mindedness, often unpleasant dreams, perhaps insomnia and night terrors, muscular stiffness, vague pains, slight changes in blood pressure, digestive and excretory disturbances, dizziness and perhaps changes in glandular activity. As an approach is made to cases close to the second grouping, specific amnesias, and localized anesthesias are likely to show themselves, motor and verbal errors, emotional imbalance, compulsions, illusions, but usually neither pronounced delusions or hallucinations and, finally, mannerisms, rituals, obsessions and peculiar preferences and aversions on a small scale.

(D) Under this first group, such older types of disturbances as the neuroses and psychoneuroses, especially neurasthenia, anxiety, mild shifts of mood that resemble the manic-depressive type, disturbances due to accident and situation and some traumas, some types of prison personality disturbance, hysteria (mild and not badly dis-sociated), mild and initial dementia praecox, shell-shock, emotional "fits."

Group II. As we have repeatedly said, it is impossible to draw sharp lines of demarkation and, in any system of classification, there will always be an additional problem at the extremes of each group. The severer instances in the first group, in proportion as orientation and the ego's acknowledgment of its own share in the situation is relatively absent or diminished, will tend naturally toward this second group where dis-sociation is greater and all the behavioristic aspects exaggerated. Where, in the first group, the adjustive effort was toward amelioration of the actual situation, concerning which, except toward the extremes, there was adequate orientation, and where integrative efforts in terms of the patterns under censure and which were antagonistic to the major aspects of the personality were found, in this second group the effort is not so much to bring the aberrant patterns into co-ordination with the major aspects of the personality as to find compensatory and substitute patterns, often symbolic, for those which were inadequate. In this sense, there is both a more or

less deliberate neglect of the real problem, and also the creation of a second problem, that involved, namely, in the nature of the substituted compensatory behavior. This means, as said, that there is greater dis-sociation and a greater disruption of the total personality. In a sense, the dis-sociation here proceeds to almost a balance between the anti-social and the permitted patterns of behavior. Instead of repairing and re-building inadequate patterns of adjustment, and which are in this group usually ignored and dis-sociated, the whole energy of the organism is turned toward the creation of new patterns which, often eccentric and actually inadequate, attempt, symbolically or in terms of fantasy, to recoup the losses which the personality has suffered, as by the claim to grandeur, vocational or professional or other super-excellence, special insight, powers, gifts, connection with God, or the Devil, occult powers, exhibitionism, magnified eccentricities of manner, posture, dress, voice and the like.

(A) The situations producing this greater degree of dissociation, with parallel lesser insight and acknowledgment of the ego factor in it, and compensatory striving for eccentric or even perverse consummation, are much the same as for those of the first group, though more severe, more prolonged and more complicated by both other matters and a less satisfactory basis of general habits and integrations on which to adjust. The fears of loss of love or esteem or position are, in this group, immensely exaggerated and always seem, to the balanced observer, as much too great for even an admittedly difficult situation, reminding one of the term "psychopathic," which we have already discussed.

(B) Again, as regards the physical aspects, one often finds a greater family background, plus a more detailed history of similar or related disturbances in the individual and his near relatives, plus a more exaggerated claim to what are actually, as in the instance of the first group, minor physical factors, plus, in many instances, however, a glandular imbalance, usually in the direction of excess activity, which in turn becomes a basis for further behavior changes. Often drug, alcohol, and syphilis conditions which, however, are not, par excellence, the cause of the particular and peculiar behavior. (See (D) below.)

(C) Again much the same as for Group I, but exaggerated and more complicated, yielding perhaps less to direct therapy, and involving also other organs, such as the heart, and the glands, plus some functional disturbances of motor, sensory and verbal patterns.

(D) In this group, remembering its connections with the first and the next, and the difficulties of categorically placing limits to

personality problems, one would place, in the main, paranoid and manic types, paraphrenics, those striving, on the basis of alcoholism, drugs and syphilis, for compensatory achievements, and the so-called psychopathic personalities, the chronic and pathological liars, cheaters, swindlers, etc., and the larger obsessions, compulsions and manias and phobias, when and if they result in or show a line-up in accord with the general intent of the description of this group. It must be remembered, however, that the drugs or alcohol or syphilis are not, as such, the direct cause of the situation, but a basis or a conditioning situation or a precipitating factor; that here as elsewhere inability to consummate drives, persistent balkings and thwartings, plus insufficient ability to solve the problems of adjustment in terms of learning and conditionings, are the real "causes."

Group III. Where Group I showed a leaning toward normal patterns and normal behavior, and Group II a balance between the claims of both normal and abnormal patterns, (these words having the significance we have in detail frequently pointed out), and consequent compensatory substitute behavior designed, however inadequately, to do what the reformation of the personality and the subordination of the divergent trends would alone properly do, Group III shows a decided surrender to the aberrant and anti-social and originally inhibited and dis-sociated patterns. In this group, the dis-sociated elements of the personality, those originally resisted, finally succeed, as it were, in becoming the dominant and active personality, and the other aspects, the originally social and normal elements, become the dis-sociated and inhibited. Here, too, there is a gradual shift from a position of just balance as in the last group, through various degrees of conflict, to final utter abandonment and uninhibited exercise of the socially non-adjustive patterns, usually of a very primitive sort and of slight degree of conditioning. If the terms deliberate suppression, and semi-conscious (i.e., often conscious) repression apply to the individuals of the first group, and compensation with repression (dis-sociated and unconscious) to those of the second group, then what Freud calls regression and fixation will in part describe the conduct of individuals in this third group. There has, so to speak, been a complete shift to patterns originally inhibited, resisted and dis-sociated, and a parallel inhibiting and dis-sociation of the original patterns in terms of which the individual can alone socially adjust and co-operate with his fellows in the cultural medium.

(A) Here, in addition to the situations listed above as precipitating the personality disturbances of Groups I and II, we

have, as important other aspects of the whole causal situation, earlier formed and highly integrated patterns of emotional and motor types, with reference to objects and persons of the early environment. Thus, to be specific, an early love fixation on mother, sister or some other impossible or tabooed member of society, an early and highly developed perversion or inversion, habits early developed which prohibit, pragmatically, the shifting of sex or other drives to proper and permitted objects, and hence the whole damming up of the drives in question. Regressions to earlier dependencies, fixations in terms of early pleasure situations, homo-sexuality, auto-erotic satisfactions, if and when so long indulged in that they resist all efforts at re-conditioning, and the like, all so highly and so strongly conditioned that, pragmatically speaking, it is difficult if not impossible to change the patterns,—such conditions often lead, finally, to complete yielding in terms of such patterns and the abandonment of those which should have, as the individual matured, taken their place.

(B) Here, as in the other instances, and again this point is emphasized, it is not so much whatever disease condition which exists, as the patterns of response and adjustment which the personality has formed (the emotional, the motor and, less important, the verbal) which are the real basis for the disturbance in question. Whatever, in the form of disease, injury, family background exists, is more to be thought of as intensifying, as precipitating, than as being the real cause or explanation of the personality disturbance. Individuals can show complete disintegration without disease, and normal integration with it. Not disease, but patterns of adjustment, are the basic issue and the real point of concern and investigation.

(C) As for the second group, but more exaggerated, and involving, more specifically, disturbances of the motor, the sensory and the visceral patterns plus, of course, the verbal, with resulting hallucinations of all kinds, and various types of postural and segmental abnormalities, paralyses, and the like.

(D) In this last group will be found the shut-in types, the depressives, the involuted melancholics, the functional epileptics, the hallucinated manic-depressives, the severer paranoics and dementia-praecoxes with hallucinations, and the severer hysterias, again with hallucinations as indicative of the dis-sociation.

It may now be asked: What is the significance and the value of this proposed system of classification and wherein does it have advantages over others such as that of the American Psychiatrical Association, which we have already discussed? In the first place, as has frequently been insisted, classification, as such, has

little or no value. If and when classification has value, it will be because it accomplishes several practical things: first, it makes clear the relationship between normal and abnormal, a prominent consideration of this book; second, it makes clear the relationship between degrees and varieties of abnormality, a problem only second in importance to the first; third, it shows the relationship of all the factors,—of disease, of accident and trauma, of social position, of heredity, to such disturbance; fourth, it shows the adjustive and dynamic significance of such disturbances, showing them as various degrees or types of fantastic and symbolic adjustment under circumstances where usual and normal adjustment has been balked and thwarted. And only in so far as these things are made clear can personality as a whole and the degrees of disturbance in particular, be seen in a behavioristic light and proper measures be taken either to prevent or to cure. It is thus frankly acknowledged that the proposed system of classification simply aims at showing relationships, in making clear the origin, the nature and the purpose of disturbances of personality in terms of the same factors which, in different settings, result in normal patterns of adjustment. In short, the classification is a behavioristic analysis of the types of situations which result in different types of conditioning, i.e., in different personality integrations.

From the general aspects of this analytical presentation of the relationship of personality disturbances, two further conclusions may be drawn, both of which have been previously noted from other points of view and in connection with other matters and both of which, likewise, have significance with reference to Part IV and the psychology of belief. First, that normal emphatically means the possession of certain more or less arbitrarily and pragmatically designated traits which will satisfy the adjustive demands of a given cultural situation, involving such sub-elements as earning a living, obeying certain restrictive and co-operative laws and regulations, respecting and not molesting the rights, pragmatically defined again, of others, and the like; and that still further, one may be normal in this sense and yet differ, extremely, in respect to other conditionings and patterns than those involved in the above social-adjustive necessary minimum; to such an extent, indeed, that one may believe in and live in terms of illusions and delusions that, without the exhibition of minimum requirements of social living, would immediately classify an individual as abnormal. Secondly, as a corollary or re-statement in another sense of the above, what society requires as a basis of admitted normality can be stated most

definitely in terms of motor patterns, and that visceral and verbal patterns, while they have some value as the basis of judgment, are yet secondary. Putting this differently, so long as one acts in accord with the social norms of the time, place and culture he is in, so long as overt behavior is in terms of the rules and regulations overtly or implicitly laid down, greater freedom is allowed in the instances of verbal and emotional patterns. One cannot, to be sure, emotionalize or verbalize without any social restrictions, but the restrictions are again largely social in the sense that such patterns must not be exhibited in public or lead to the contaminating or reconditioning of others, but if they do not do this, and if they do not prohibit the motor patterns the individual is free to indulge in any and all emotional and verbal patterns. If the reader will recall the earlier discussions on these types of patterns, he will see that they have, of course, relationships among themselves, but are in no sense identical, and may logically contradict one another. Thus one may act properly, and yet verbally disagree with such motor patterns, or emotionalize against them, but if the motor patterns can be exhibited, in spite of such conflict in the individual he will pass for normal. Naturally, as the classifications above brought out, such conflicts, particularly emotional against motor, are the very essence of the causes of disturbances. In this sense of the predominance of motor patterns for a pragmatic acceptance of the personality by society, Aristotle was emphatically correct in saying that the good man is the one who acts right, as contrasted with Socrates who said the good man is the one who thinks right, or with the many theorists who claim that the good man is the one who wishes right, if wish be taken in the visceral sense.

This may be stated still differently, namely, that normality and abnormality alike are to be defined in terms of traits and patterns which are present and equally in terms of traits and patterns which are absent. The definitely abnormal are so as much because they lack certain patterns of adjustment as because they have others; and the same is true of the normal. Finally taking for granted a certain minimum that will constitute a pragmatic basis for normal living, from such a basis two types of development derive; first, a gradual progressive development of such other traits, such conflicts, such loss of the minimum normal, as finally ends in abnormality through dis-sociation, compensation, regression, as described above; and secondly, the development of such compensations, the solution of conflicts through such other forms of consummation and belief-adjustment, the development of such "as if" attitudes as do not, in

terms of the discussion above, militate against social observances and adjustment but which are yet illusions and delusions in the same sense as those of the definitely abnormal. It has been pointed out several times, that this consideration leads directly to the psychology of belief considered in Part IV.[12]

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[12] Confer references in connection with Sections 2 to 12 of Ch. II above, and Sections 4, 5, 8, 10 and 11 of the present chapter.

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CHAPTER IV

PERSONALITY AND SOCIETY

1. The Social Reference of Personality. 2. The Educational Bases of Personality. 3. The Radical and the Conservative. 4. The Delinquent and the Criminal. 5. The Personality of the Genius. 6. Institutions and Personality. 7. Personality and the Crowd. 8. Crime, Punishment, and Reward. 9. Summary. Bibliography.

[1]

Social Reference of Personality. There is a peculiar and interesting give-and-take relationship between the individual (organism) and the group. Personality is both made by and in turn makes its collective alter-ego and opponent,—society. This is, of course, but another way of saying that personality is the integrated sum and substance of an individual's behavior as based on inheritance (germinal) and environmental-group training. All that the individual has, in one sense or another, is a gift from society. Each individual is the focusing point of the past and the point of spread to the future. This relationship of society and the individual gives rise to many problems, practical and theoretical, of which there now exists hardly more than a mere beginning of a knowledge of their nature and relationships. Little is being done or is now planned for the doing. Incidently, of course, this means that society and the individual personality develop more or less along parallel lines and, on the whole, where society is deficient as regards customs, institutions, mores, and ways of associated living, so likewise will be the personality, with those exceptions which will later be discussed where, for one reason or another, some special situation makes a tremendous difference.

Great societies have had great personalities; the history of many a cultural period is the history of its outstanding individuals, and while the error must not be made of seeing these personalities as free agents, apart from the influences and stimuli of their time, or as creative in terms of a supposed "spirit" of genius, but rather as the embodiment of the very culture they so tremendously changed, none the less the effective agent was the embodied culture in the personalities of the time. This culture-personality complex, this sowing of the ideals and institutions and mores and dreams of the period in the growing

individual is, as knowledge of the process now goes, something of a mystery. It is, of course, theoretically and broadly, a matter of education and of the inculcation of a philosophy of life, as was indicated in the last chapter, but emphatically not merely of formal education in school as we now conceive "school." We cannot now point out what conditionings, what situations meeting what gifts and latent abilities of heredity, will produce the outstanding and transforming personality. We do know that some individuals of mediocre intelligence have changed the very face of the earth and we know, also, that others of outstanding intellectual ability have done little or nothing to merit their mere existence. And yet, in the final analysis, just in so far as psychology is the science of human behavior, and the personality is the highest and most inclusive concept with which that psychology deals, we must continue to aim at such knowledge of cause and effect in conduct, such knowledge of the differential weights of various heredities and various environments, that we will ultimately begin to solve this very problem of the origin, the growth and the control of personality in a given social culture. Incidently, to acknowledge again, as has been frankly done time after time in the presentation of the present point of view, that we simply do not know the facts and sometimes cannot even guess at what they are or might be, is no confession of complete bankruptcy. The gibe has often been made that psychology tends to be either mere physiology or mere literature; in a sense this is perhaps a good criticism, however exaggerated, to be kept in mind but not to be believed too blatantly and too casually. In comparing the social sciences with the physical sciences, as we have already mentioned, we find many excellent reasons,—not excuses,—for the present status of the social group: their infinitely greater complexity, their infinitely greater difficulty and importance, the impossibility of experimentation, the inertia of custom in the individual and the group alike. And, if we are not overcome with the glaring light of the success of the physical sciences, we can be just as critical of them as they are of the social sciences. In the last analysis, even the most rigorous of the physical sciences, since they are the activity and the behavior of human beings, must come to terms with psychology and ask for some guidance as to what is right, what is wrong, what good, what bad, and particularly what is the final and fundamental reference and significance to human nature of the facts they catalog and manipulate. And signs are not wanting that there is just as much doubt, in the inner circles of the physical

sciences, when it comes to painting a complete and satisfying picture of the behavior of the external world, as even the most despairing social sciences could exhibit in their most pessimistic moments. But this topic will serve here merely as a reminder of the attitude we must necessarily take in pursuing the subject of human behavior because of the present situation, and does not prohibit the pursuit of greater knowledge and greater accuracy. We will, when considering the matter in more detail, in a later chapter, have much more to say on the subject.[1]

[2]

Educational Bases. What we need, then, from a practical point of view, is a more detailed, a more profound and a less speculative study of the process of what we call education. It is already clear that the root meaning of this term "education" does not cover the whole process of that development of personality which we have sketched in our treatment of temperament and disposition, in the analysis of types of temperament and personality, the conditioning of drives and fundamental emotions and all that field of abnormalities which the Freudian movement concerns itself with. It is quite clear, for example, that education, in the more formal and school sense of the term, has been mainly concerned with the development of the mechanism side of personality, with the imparting of knowledge of certain restricted groups of facts, with the development of certain types of motor accomplishments and with the gaining of certain skills of mixed and complex nature. To be sure, the newer movements in the experimental schools have somewhat widely departed from this and endeavored to concern themselves with the formation of attitudes and emotional sets, the conditioning of drives and all those things which really lie, as we have seen, at the basis of the development and adequate adjustment of personality. Of course, any school system and any type of living in a group will, as we have shown, develop a personality; personality is the inevitable outcome of any living at all, but whether it is that type of personality which, on a large or a small scale, will be what we call creative and progressive for want of more accurate terms and measurements, depends on the introduction of some special type of education, some deliberate and systematic balancing of what conditionings we give to whatever special temperament is the basis for the education. And we do not know any too much about this process;

[1] Allport, particularly Chs. X to XV; Burrow and Malinowski in general; Martin, throughout; Wood, Flügel, Dewey, *School and Society*.

we hit and miss, sometimes succeeding without altogether knowing how or why.[2]

Not until whatever psychology, in its larger aspects, can and does offer comes to be used as the basis for the new study of educational problems, not until we begin to pay more attention to other than purely mental and mechanistic aspects of the process of forming a personality will we achieve the results we look for and at present have not found. While we cannot spend much time here on any of these special problems, it will perhaps repay us to take some little notice of a few of them, such as that of the radical attitude as opposed to the conservative, and the general situation with reference to the parasite, the criminal, the genius and the delinquent. Necessarily, our treatment will be sketchy, since the whole foundation of our knowledge of the real facts is slight but we can at least analyze some of the misconceptions and show how a better understanding would give us greater control of the conditions and the results. Certainly, also, it is an eminently practical matter, and since psychology ultimately is a practical science, aiming at knowledge, like all sciences, for the sake of ultimate manipulation and control, anything that can be accomplished will not be merely a justification of psychology but an impetus for greater research. The time is far distant yet when psychology will have as much to say and to do concerning practical affairs as the physical sciences now do, but being distant does not mean that it cannot be achieved. One difficulty with the older psychologies was their aloofness from current interests and their effort to be closed, speculative systems of esoteric, self-sufficient, verbalized thought; if philosophy, as we now tend to evaluate it, should "bake bread," then certainly psychology can do even more.[3]

[3]

The Radical and the Conservative. One hears a great deal, particularly these days, concerning the so-called radical and the equally so-called conservative. Indeed, one would think, judging by the remarks alike of amateur and professional psychologist, that here again was a fundamental difference in human nature,

[2] See, as particularly covering the field of childhood and infancy, and as applying to the individual the general theories and conclusions of the preceding chapters on personality and its disturbances, but as a more constructive and educational approach, Watson, Arlitt, Fenton, Gesell. The whole field of educational technique and theory will be covered, from the psychological point of view of the present text, in an immediately forthcoming book on the subject.

[3] See Dewey, both references, Seham and Seham, Wallin, Mateer, Platt in general, Seabury, particularly Pt. IV.

a division of human beings into groups on the basis of nature and heredity. No one, to any degree of worth-while results, seems to suspect that these may be types or traits due more to environment; that radicalism and conservatism, as attitudes, may be learned, are perhaps conditionings brought about by very early and even very casual experiences; in a word, are dispositions, not temperaments.

Even the definitions of the terms are extremely arbitrary and often completely ignore the undoubted fact, open to easy observation and inquiry, that he who is radical in one situation or with reference to certain acts or problems of life may be either relatively or absolutely conservative toward others, thus contradicting the assumed heredity basis of the attitudes, since one can hardly argue, even if extremely prone to speculative technique, that we inherit specific attitudes toward concrete individual institutions and situations of mature social life. The etymological meaning of radical will not do either, since all radicals do not go to the root of the matter at issue, any more than all conservatives strive to save what is and what has been. Nor is there a basis at all for assuming, as each group or type tends to do, that more thinking is done by the one than the other, or that the hope of social salvation lies with the one or the other; equally intelligent conduct is found on both sides and equally stupid; equal ignorance of facts, equal lack of judgment, equal indifference to things which have not become a matter of interest and long association.

If we consider exaggerated radicalism and equally exaggerated conservatism, we find on the one hand a tendency to distrust all that is old, all that has the sanction of time, prestige and numbers; on the other hand just the reverse; and in both instances a very great discharge of emotion. Perhaps the clue is just here, in the nature and peculiarities of the respective sources of emotional conditioning, of the setting of the drives and the coordination thereof; the patterns of response in other words, begun and developed early in life. If certain complex motor-emotional-verbal patterns of conditionings are formed early and frequently entrenched by further experience deeper and deeper, we find less tendency to try the new, to find adjustive satisfaction in any but habitual situations, or to experimentally shift from values to values; in a word, there results a general, well-established, relatively stable form of adjustment. All that is old is not therefore bad; all that is new is not therefore good, but we can as easily come to be conditioned the one way as the other and to adopt, if not quite so blatant and so futile an attitude as either of

these, at least one inclining more to the one than the other. The conservative, perhaps because his early behavior patterns have more nearly succeeded in enabling him to satisfactorily adjust himself and obtain a reasonable degree of organic and conscious satisfaction, becomes the more entrenched in what has enabled him to do so; the radical, once he has begun to shift, tends to continue to do so, and having found little to satisfy him here, finds equally little there and all the more indulges in the larger habit of forming no fixed responses. Still further, the conservative like the radical, rationalizes; and where the one does so in terms of established and satisfactory values, the other does so in terms of values yet to be attained, the product in turn of fantasy, dissatisfaction, and barren and thwarted speculation. For the radical, the Golden Age is often long ago or just around the corner next to be turned!

Familiarity need not breed contempt for the familiar but, on the contrary, for the unfamiliar; once we find habits and establish modes of behavior which suit us even passing well, the mere ease of continuing to act in terms of them and the difficulty and pain of abandoning them and laboriously forming new ones is enough to further impress the old ways of adjustment into the structure of the organism. Thought and action often go together as different expressions of the same or associated conditionings and the conservative in one is apt to be also the conservative in the other. Besides, to be too unconservative, brings also other penalties, namely, the loss of social esteem, and privilege; in a word, the whole inertia of human nature and most of the social stimuli make for the early establishment of patterns of behavior which are in accord with those of the group and which tend to perpetuate themselves alike in individual and the crowd. Thought, as a mechanism, becomes rationalistic; thinking becomes a defence of a desired position instead of an exposition of objective facts, a justification instead of a demonstration of truth. Here, again, the argument touches upon and anticipates the discussion of the adjustive value of belief, and ties the argument up not only with our discussion of the abnormal personality, but with that yet to be reviewed, namely, the ways and levels on which the personality as a whole, and in terms of major or minor beliefs, adjusts itself to the problems and the vicissitudes of experience, seeing always and everywhere better values and greater security. Certainly, without making direct comparisons, it is clear that the ultra-radical and the ultra-conservative, as presented here, do show affiliations with certain abnormal trends,

the point of differentiation being, here as always, the saving social adjustments made on the part of what might be called the professional radical or conservative which make each of them, for all their frequent lack of balance and co-ordination, still tolerable members of the community at large. But, in any exaggerated example of either type, there is no question that mechanisms, exactly the same and of the same degree as those found in neurotic and psychotic personalities, are the only possible behavioristic explanation of the peculiarities of adjustment observed. Incidently, the frequent diminution of extreme emotional radicalism with age and experience is supplementary evidence as to its adjustive significance.

On the contrary, discomfort, and the failure of old habits, as well as lack of the learning of well-established attitudes leads to the radical personality. Radicalism, however we define it, is largely the product of unrest, lack of habits, lack of adjustment; ease and comfort seldom if ever lead to radicalism in any sense. The radical is the balked individual, and it is here that the whole argument may again be seen in its relationship to our discussion of abnormal personalities. Too great and too perfect an adjustment, too great a mass of habits, too great a stereotyping of one's reactions to the world would be as futile as a complete lack of adaptation, and where we might call the former a sort of apathy and automatism with little striving (the ultra-conservative) the latter would be almost a frenzy, a complete helter-skelter attitude with no system and no learning (the ultra-radical). Neither, to be sure, is a frequent practical result in these extreme instances; both are aspects of processes or attitudes theoretically carried to logical extremes. But the balked drives of the maladjusted individual, when and if there is still some sort of orientation and consistent though poorly directed striving may lead as readily to a radical attitude as the balked drives of the repressed and inhibited individual lead to the neuroses. Radicalism is a means of solving a conflict even as are neuroticism or apathy. Just as we found that the neurotic can and does project his inhibited urges and see in others the cause of his own errors and faults, or seek substitute satisfactions and symbolic expressions, so the radical may seek to blame his lack of adjustments on society with the additional trait that he does some thing or tends to do something objective, to right the wrongs, whether real or not; to strive for the accomplishment of his ideals whether actually worth while or not; in a word, to work for actual concrete satisfaction instead of seeking a purely or relatively fantastic and symbolic one.

None of this is meant to indicate that radical or conservative should be always considered as pathological, whatever that elusive terms means; it simply means that the conservative is perhaps too well adjusted, that early formed habits and attitudes are too securely established, that old interests dominate too rigidly, that there is insufficient flexibility of the organism in its relationship to the total environment; and that the radical, on the contrary, has never learned satisfactory habits of adjustment, has never attained to values which lead to adequate satisfaction of drives, that no dominant interests except the interest in finding interests, that there is too much flexibility. Both pictures are acknowledged exaggerated, but the distinction is clear, and it should be equally clear that it is not a matter of inheritance but of early surroundings and conditionings.

It has already been said that the old, as merely the old, is not necessarily the best or even good; and that the new, as merely the new, is equally dubious if that alone is in its favor; in short, what both radical and conservative need more than indoctrination with one another's attitudes is what the neurotic also needs, namely, a better mechanism of adjustment, better and more objective thinking, less adjustment in terms of wish, desire, thwarted urges, habits and indulgences, more interest in facts and their relationships and their actual meaning for the welfare of the organism. To be conservative toward evolutionary doctrines simply because they threaten the achieved adjustments, or to be radical toward them and to apply them to new and socially forbidden fields simply because of personal dissatisfaction with the institutions of society is not as such productive of better adjustment for either group; to search out the facts, to apply them as far and no further than rigorous, experimentally buttressed thinking permits is to be neither radical nor conservative but to continually adjust and re-adjust in terms of the mechanism of knowledge, to continually satisfy old and new urges, but all in terms of facts. Love and fear, hate and sorrow, disgust and chagrin, as such, settle nothing; they are simply drives open to consummation in terms of facts and knowledge, and the more facts and the greater the knowledge the better and the more stable the adaptation and consummation, leading constantly to further differentiation, growth and even better adjustment. But we will have to leave further discussion of this topic, which is really another presentation of the question of personality-adjustment, and also an aspect of the problem of an adequate "philosophy of life" in the sense recently presented, to further treatment from still other points of view in later chapters.

The reader is particularly referred to the treatment of science and philosophy and other major adjustment-schemes in Part IV.[4]

[4]

The Delinquent and the Criminal. Similar confusion exists with reference to the criminal and the delinquent and the whole host of problems that arise, legal, educational and penal, in connection with them. And it is almost certainly true that the older ideas to the effect that the criminal and the delinquent were heredity types or temperaments, born as such, are wrong; on the contrary, it is quite certain that both of them are made, and that there are certain relationships between the criminal, the delinquent, the genius and the types we have just discussed, namely, the radical and the conservative. All this discussion is, again, an instance of the social reference of personality; personalities, in spite of whatever assumed temperamental heredity bases may exist (with possibly some few extreme exceptions) are emphatically social products, i.e., made by the group life in which they become conditioned and develop mature patterns of behavior.

If we speak in terms of the so-called "instincts," which we have preferred to call social habit-complexes or conditionings, one cannot distinguish between these as exhibited in the criminal and the normal individual, except in terms of what situations arouse them or with reference to what mechanisms are used to consummate them. The criminal, like the normal individual, is interested in possessions, in the esteem of his own particular group, in the consummation of his purposes and ideals; he indulges in fear, anger, rage, hope, love and all the other simple and complex emotional expressions, and is a criminal, not because he does all this, but because of the situations in which he exhibits them, the conditions under which he consummates them. It is quite apparent that these conditions are the result of training; he was not born with any definite habits of consummation; they were acquired just as were those of his more conventional neighbor with different patterns and techniques of consummation.

Indeed, it is no longer probably necessary to argue this particular point because, on the whole, it would now be granted; but it is not for a moment implied that the granting of what is here involved in any sense solves the other fundamental associated problems; those, namely, concerning what sort of training pro-

[4] See Wolfe, throughout, but particularly Chs. II to VIII; Scott, particularly Chs. I to III and VI; see Kolnai, Burrow, Flügel, Malinowski, in general, for the psychological background of the individual's career as a basis for his social attitude.

duces the conventional, and what sort of training the criminal, nor yet of the other problem, what to do with the criminal when he is definitely conditioned to be such. But even in the cataloguing of personalities, as we have already seen, there are difficulties, and it is particularly difficult, in any culture and at any given period to sharply and clearly and adequately distinguish between, say, the radical, the criminal and the genius. They are all, regardless of what definitions we give, different from the normal; they all, regardless of our particular attitude, are to be seen as examples of the differential activity of heredity and environment; and they all, likewise, show the same drives and mechanisms, though differently related and conditioned. Incidently, it should be quite clear that no division of great significance can be made in terms of these words; personalities cannot, in any productive sense, be divided into criminal versus non-criminal, radical versus conservative, delinquent versus responsible; these terms describe personalities merely from the point of view of some more or less arbitrary standard and do not point out in them any sharply defined qualitative differences, the arbitrariness of the definitions being still more arbitrary in the shifting they undergo from time to time and place to place and, finally, these terms take no account, in any fundamental way, of origins and developments of the end-results catalogued and discussed. All the individuals of these groups have, perhaps, as much initial potentiality toward the forming of normal or at least well-adjusted personalities as have those of any other group, and the whole situation is just another instance of the insufficiency of present knowledge, the inadequacy of present procedure and the inertia of present social habits, plans and ideals, as well as an excellent example of rigid, stereotyped, wishful and compensatory-protective thinking on the part of the group which is in the majority.[5]

[5]

The Genius. Another aspect of the problem is the hopelessly inadequate conception and treatment of the genius; the foolish and useless concentration of interest and concern on the I.Q. of a personality which may remain, for all the knowledge and intelligence ultimately vested in it, woefully weak and unadjusted in many other far more fundamental and important directions. In the actual practice and procedure of education, whether formal within the school or informal and more or less casual in the

[5] See, especially, Darrow; also Mercier, White, Wallin, Mateer, Burnham, Platt, Seabury, particularly Pt. III; Schlapp and Smith, Bks. II and III.

home, or in the permitted but unsupervised education of street and play-ground or in the unknown but important contacts made in reading, theatres and the like, we totally forget that what may develop the growing intelligence, what may give it facts with which to work, may also be giving it training in the consummation of wrong, unbalanced, inadequate, detrimental conditionings.

In short, whatever we may regard education to be, it is surely as much a matter of attention to drives and their conditionings as to verbal mechanisms; to the proper conditioning of urges as well as to mere knowledge and vague possibilities of conditioning. To repeat a statement made in other connections we must not forget that the drives which are consummated by a superior intelligence are, as drives, no different from those consummated in terms of a lesser intelligence; that intelligence is not the factor which decides which drives are consummated or how various consummations are interrelated and balanced. Attention is again called to a former exposition of what might be called a "philosophy of motor and visceral conditionings" as contrasted with philosophy in its usual sense, namely, as a mere verbal exposition of actual, possible or probable experience.

It is clear, both from current records of gifted children and from the records and the detailed and substantial though second-hand and indirect observations of historical cases of gifted individuals, that the intelligences in question were, in the case of successes, in the service of adequate and socially significant drives, and that such cases of current failure of highly intelligent individuals as have been observed are due to inadequate emotional and drive conditionings and not at all to the inadequacy or inapplicability of the intelligence, as such. But so long as educational emphasis and educational techniques continue to concern themselves mainly or entirely with the elements of purely formal schooling, and the development of verbal patterns that have little or no reference to actual situations of every-day adjustment, neglecting the conditionings of emotional and motor aspects of behavior, ignoring the experience value of situations outside the school, such as play and various types of social contact, letting the questions of the balancing of urges, the attainment of well-rounded attitudes and the like be settled largely through chance, just so long will it also be a matter of chance whether an individual, gifted intellectually, will become a creative member of society, a parasite, a delinquent or a criminal. And, as was remarked in our general discussion of intelligence, morals and social conduct, adequate conditioning for general all-round be-

havior cannot take place in terms of words alone; receptors, effectors and connectors, other than those involved in verbal patterns are as essential a basis for such complete education as is needed. Verbal patterns may, as has been acknowledged, make more exact and deliberate any given adjustive effort, but to say that is not to deny that the concrete, non-verbal conditionings must be given whether the verbal accompany them or not. Much the same argument, though with a lesser degree of importance and that mostly negative, may be applied to the problem of the feeble-minded. However excellent his training as regards drives, he may never be a very productive or valuable member of society though, if the fundamental training be entirely neglected, and particularly if the drives be strong and the physical strength great, he may be a potential doer of great harm to the community for all his lesser intelligence. Not all criminals and delinquents are low in intelligence and, as we have seen, there is no necessary correlation between the degree of intelligence and social adaptation within at last very great margins or degrees; all personalities or organisms of all degrees of intelligence need to be so, conditioned that they will endeavor, in terms of what intelligence they have, to consummate socially permissible and desirable drives. But this situation, simple in outline, is complex in detail and we cannot here pursue any further the details of the educational problems involved.

It is often held, though various summaries of the apparent historical facts and the details of biographies do not at all agree and are, in the main, based on *a priori* conclusions and purposes and fail to adequately define terms, that genius is so often characterized by such evident peculiarities of personality, that there is a high correlation, based on heredity, between what is called genius and either insanity or neuroticism. The literature, as has been said, is very dubious, and the terms insanity and neuroticism appear to be stretched to facilitate the inclusion of as many as possible of the world's great into their reach. On this subject several things can be safely said, in the light of our general discussion of personality abnormalities and on the basis of what little really adequate evidence exists for immature and developing geniuses; first, that the developing child with a high I.Q., as we have already seen, is also, on the whole, characterized by better health, greater energy, better social affiliations, greater freedom from disease; in a word, is a better animal all-around as well as with reference to just intelligence; secondly, that the too ready identification or correlation of high intelligence with personality disturbances fails to take account of two purely

environmental factors which we have previously mentioned, and which make doubtful any correlation based on heredity and explain what actual correlation exists on the basis of experience and conditioning.

The first factor is what might be called in Adler's phraseology, compensation; that is, if and when a child is deficient in the ability to live a normal complete and active life, and yet is both able and given opportunity to develop his mental abilities and to form highly complicated patterns of verbal nature in the place of those that he would otherwise have formed with reference to more general situations, it is then possible that he will become, simple because of the lacks in his training, neurotic or anti-social to any given degree. The second factor which can and often does result in final imbalance of the personality, and theoretically to sufficient degree to be called actual abnormality, is related to the first but requires not so much an initial physical disability to base it on as a too-pronounced, too specialized and too long-continued interest in and devotion to the purely mental. Whether this argues for such inherited or native deficiency of other drives as to support the point the exponents of genius-insanity pleas hold, is debatable; poor education, meager opportunities, plus the general effect of the accumulation of learning and the development of superior intelligence are sufficient to make it all a matter of environment.

Thus, a maturing or adolescent individual, with a highly developed intelligence may, as a matter of fact, find adequate companionship difficult to obtain; he may also, because of greater intellectual insight into the stupidities of custom and social observance, become ostracized for his criticism and his non-observance of what others believe holy, taboo, inviolable. In short, as the individual develops beyond the average, he may find the average hard to live with or to even consider worth listening to in matters that seem clear to the intelligence of the genius but equally clear, in another sense, to the less intelligent. This can easily lead, in the long run, to abnormalities of conduct sufficient to be called, in popular language, "insanity"; but on purely empirical and common-sense bases is more evidently related to the environment than to any supposed inherited correlation between genius and a defective personality. Being a genius is, in itself, being abnormal and leads, almost inevitably, as social matters now go, to further differentiations of conduct which then become the basis for such peculiarities as seem, to the man in the street, the essence of insanity. Here, again, it is largely a matter of education; properly conditioned as regards social matters, taught

an adequate philosophy of tolerance, given a technique of social contact, the gifted individual would be worth more both to himself and to the group and would no longer seem queer to those who could not understand him or attain to his insight.[6]

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Institutions and Personality. There is another way of viewing the conflict between society and the individual; that, namely, which contrasts the institutions of the group with the drives and general nature of the individual. Figuratively speaking, the members of a given group are like animals in a cage, in that their activities are blocked, thwarted and compressed within the limits of a scheme of things and a regulation of behavior which may or may not be in terms of the biological and physiological needs, the drives and urges of the organism in its ordinary development. Here, of course, arises again the difficulty of defining "natural" and "unnatural," but if we think of natural as that which is in terms of original structure and such consequent modification thereof as furthers and develops health, balance, the love of life and the spirit of social co-operation, while we will have nothing very objective, the general idea will be reasonably clear. And it is certainly demonstrable, at least for some times and some places, that social restrictions of human traits have defeated and deformed the natural development of human personality in this sense.

Putting this differently, an institution, say, which places merit upon the neglect of hygiene, cleanliness and health is defeating, in the interests of whatsoever other hypothetical values it puts in their place, the real welfare of human nature. This is, as social concern and control now goes, not an issue, but it is at least questionable whether the institutional attitude toward sex relationships, say, or the recent emphasis, now lessening, in favor of the male in all lines of endeavor other than the domestic, was not and is not an equally significant contradiction between nature and institution. Plato's general attitude that if a woman have the "soul" of a physician she should be a physician is better adapted to the flowering and development of personality and the development of high group culture, than an artificial barrier raised in the interests of some group, or either sex, some fantastically conceived idea or ideal, some perverted sense of values, based

[6] As for Note (3) and Terman (ed.) Vol. I, for first-hand reports on young individuals of high intelligence. Vol. II, for indirect, second-hand investigations of historic instances of genius and the conditions of its development. See, for the more popular theory of genius-insanity which is here criticized, Nisbet, and for earlier speculation, Lombroso.

on fantasy and wishful rationalization. While it is undoubtedly true that we do not yet know too much about values and about personality as a whole and what brings it to fruition, it is as undoubtedly true that we do also know that the older methods were false, detrimental, destructive to the best interests of individual and group alike.

An institution, from the present point of view, is simply an accepted, an accredited, an established way of behaving in a given situation or with reference to certain matters and while represented, overtly, by laws or buildings or ceremonials, has really no existence except in terms of the habits and conditionings of the individuals who revere, respect, love and serve it. An institution is but the social reflection of the attitudes of a group or the majority of a group of individuals toward life or some of its aspects. And groups of individuals, whether large or small, may be and often are wrong; and even if we grant the rightness and righteousness of a given group in some certain time and place, it is evident on even a superficial reading of history from a psychological point of view, that institutions in terms of the real or apparent needs of a given time and place are, sometimes soon, sometimes late, rendered useless and even harmful because of a shift of the circumstances which originally made the institution possible, acceptable or even necessary. But institutions which balk given urges or appetities of human nature, or which endeavor to condition them so minutely and so sharply that the very process of conditioning becomes a burden and leads to practical balking, or which lead to constant and widespread efforts to circumvent the rigors of traditional control, or which have no adequate apparatus for the proper conditioning and which make no proper preparation for individual differences, or which treat the human organism as one in which reason and intelligence rules, or which allow counter-conditioning agencies to compete, are doomed to failure, but failure preceded by chaos in the individual and the group. It is notorious that many institutions, in one respect or another, such as the school, the church, the institution of marriage, the rules and regulations concerning sex, love, property and the like are subject, each of them, to some of the criticisms enumerated above and are, therefore, as institutions, not adequate to present social needs and to the present trends of human personality development.

Institutions, in a word, have no other sanction than that of the nature and conditionings, i.e., the needs and desires of personalities creating or establishing them, and just in proportion as

the adjustment of such personalities to life is or was futile, so will be the institution which they establish in terms of their own sense of values. Institutions have no mystic or supernatural value or origin though they often claim such enhancement of their actual worldly and human genesis, and ultimately can remain established only in so far as they minister to actual and concrete human welfare in terms of the consummation of drives which are healthy, balanced, worldly and material. Here, again, there is a cross-connection with the abnormalities of personality we have discussed, in that inadequate or ouworn institutions are efforts to solve a situation in terms, not of facts, but of fantastic creations, substitute realities, dereistic thinking, belief, and delusion. One cannot eat straw for food, and one cannot love a barren and repressive symbol in the adequate sense of loving, involving all the structures of the organism. One can, of course, be conditioned, literally, to almost anything; there is probably no limit, except that of death, to how drives can be conditioned, but the consequent abnormalities produced by conditioning which thwarts the very consummations avowedly, or apparently or symbolically aimed at produce, ultimately, either revolt or such resignation that life becomes unlivable. All suicide is not by violence.

The defenders of a given institution are usually those who find life tolerable in terms of the conditionings insisted on by that institution, partly perhaps because such individuals have weak drives in the directions censored by the institution, or have had early and continuous training in repression or compensatory adjustment, or find sufficient and necessary activity in other directions. Incidently, it is often easier to impose on one's self if one subsequently and therefore imposes the same restrictions on others; also leadership often gives a freedom to the leader denied the follower who may not, at his peril, interpret the rules. Even a cursory acquaintanceship with the actual careers of noted repressive reformers and extremists in the matter of institutional life, gives one good ground for more than a suspicion that the very imposing of restrictions on others adequately satisfies for the leader the very drives which are forbidden for the follower. Vicarious satisfaction is not always entirely vicarious; the psychology of certain types of reformers is extremely interesting. But we cannot pursue this special subject beyond this mere statement of some of the problems involved.[7]

[7] See particularly, Wolfe, Seabury, Wood. For psychoanalytic approach to the family and, indirectly, to other institutions, see Flügel, Kolnai, Burrow. See Rinaldo for popular, psychoanalytic treatment of "reformers."

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Personlity and the Crowd. Another host of problems involving the social aspects of personality occur within the domains of that social phenomenon called, variously, the crowd or the mob. It is astounding what changes in behavior can be brought about in even the most staid individual once he becomes subject to the abnormal conduct of a large group of individuals as a complex stimulus-situation. Widespread hysterias, dancing manias, sudden indoctrinations with new beliefs and new phrases and new forms of trivial behavior, some of them even absurd, some of them of extremely dubious origin some of them actually detrimental to health and well-being, many of them contrary to the established institutionally acceptable modes of behavior of the temporarily crowd-stimulated individuals, are typical, alike historically and contemporaneously, of the behavior of individuals in a crowd-stimulus situation.

Concerning this abnormal behavior of members of a crowd or mob we can and do utter wise and perhaps, in part, accurate reflections, but it is only fair to confess that, apart from vague Freudian terminology or terminology equally without objective proof and relationship, we cannot explain just why behavior undergoes such sudden changes in a crowd situation. We can and do speak of repressions suddenly released because of a perception of the authority of the crowd; we can and do speak of imitation and suggestion, but while we can thus speak, we cannot yet write this story in terms of S——R, in terms of conditionings or structural and tensional peculiarities. We know, from the best of good observation, that crowds do overcome a lifetime of training in a few hectic moments of stimulation, but where and to what degree the training was defective and what might be done to render an individual immune to such stimuli, and even whether it would be wise, and what other results would run parallel with it, we simply do not know.

It is true, on the whole, that crowds, or rather the individuals constituting them, seem to shed the conditionings of culture and revert to primitive, simple, expeditious and utterly frank and brutal behavior, and it has hence been claimed that man, as such, is brutal, and that therefore any and all repression, threats, punishments given now or promised for the hereafter, are justified if only they restrain individuals and crowds from such types of behavior. But, granting that a system of values and conditionings which, however rough and overbearing, would be restrictive of the more brutal behavior we have just described, and would,

therefore, be pragmatically justified, we would yet have to show that the expected fears and punishments of such a scheme of control would actually work. And, so far as we really know anything, and do not just attempt in words to justify a personal optimism and verbal point of view, we must admit we are ignorant of the exact facts.[8]

[8]

Crime, Punishment and Reward. In our study of conditioning as an actual physiological process, founded on changes in circuits or additions thereto, and in our criticisms of the older association schools, we saw that "ideas" of this or that, as mere ideas, do not function except, of course, verbally; that what actually functions in behavior and overt adjustment, are complete circuits made up of receptors, connectors and effectors, whether including verbal response circuits or not, and that an idea was not itself a structure of any kind but the result of the activity of a (neuro-muscular) structure. We saw, too, that rewards or punishments long after a given response to a definite stimulus or situation had no effect on the animal's attitude or behavior toward that stimulating situation; rewards or punishments, to produce expression or inhibition, had to be definitely joined to behavior when and if exhibited.

An understanding of punishment, as a mere idea of that punishment, or even as an actual logical-verbal realization that certain acts will inevitably bring such and such a pain or punishment, does not and cannot function as a deterrent if merely, as stated, a verbal conditioning without cross-connections with other effectors as part of a larger pattern, particularly if the drive pressure is high and the desire to act is great. An individual who dislikes a given food and who has experienced actual illness or discomfort in connection with it, and talked about it also, does not eat that food because of the conditioning involved and also verbally refuses to eat it or to consider eating it; but even here, actual or impending starvation may overcome the conditioning. But in this instance, as in all complete social conditioning, there has been actual experience of the pain and discomfort and adequate representative verbalization in connection with a given form of behavior and a given stimulus; whereas, in most social forms of deterrent criminal law there is no such experience in many cases and, even where there is a partial con-

[8] See Conway, for general treatment, Martin for psychoanalytic approach, LeBon for earlier speculation, Wood for more institutional treatment, and Flügel, Burrows, Kolnai, as previously, for larger aspects of the problem.

ditioning, there is so much on the other side, making for conditioning directly opposite to the conditioning socially desired, that the net result is practically zero. Punishment and reward, to be efficient in controlling the conduct of the individual, cannot be a possible punishment or reward perhaps to be administered when and if the doer is detected in the doing, for all this contradicts all the knowledge we have as to motivation and conditioning and the laws of learning, yet in the interests of its supposed efficacy we see constant superficial and speculative arguing on the subject.[9]

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Summary. We have several times commented on the criticism that psychology tends to be either mere physiology or else poor literature, with the implied suggestion that, in either instance, it is superfluous; we pointed out at such times, that it can be more than physiology simply because it is concerned not with the structure, as such, of particular organs, nor with the mere isolated functioning thereof, but essentially with such co-ordinations, such massings, such co-operations of various organs and their functionings, and such modifications of functionings that, as psychology, we achieve a new, a better orientated and a more meaningful point of view with reference to the whole human animal and his behavior as an integrated personality. And, as far as the literature aspect is concerned, in so far as what speculation is indulged in is in terms of what facts we know, so long as it does not contradict them, so long as it is productive of new attitudes and hypotheses which may be objectively investigated, so long as it is not taken for gospel, so long as it synthesizes and co-ordinates the more rigid atomistic analyses, no harm, and undoubtedly much good, is done. Even James is literature at times.

Probably much that we have even tentatively proposed concerning personality is more literature than physiology; in fact, it has frankly been acknowledged, as we went along, that the facts were often not completely known and that the best we could do would be to form tentative hypotheses in terms of what little we do now know. In short, so long as we speculate in terms of facts and not contrary to them, so long as we speculate objectively, and not subjectively in terms of wishes and pre-conceptions, we will always be in a position to test such speculations and either to discard them or replace them with

[9] See Seabury, Schlapp and Smith, Malinowski, Platt, Darrow, Burrow, and confer the references in the chapters on conditioning and learning.

better and more factual explanations. This much is sure, namely, that psychology, as psychology, i.e., as the actual or intended science of human behavior, as the science of personality, cannot retain any independence, any assured position, any value to human affairs, if it remains on the level of physiology, nor yet of course if it tends to the other extreme and becomes too loose in its testing out of speculations. In the one case it will stagnate; in the other disintegrate.

Furthermore, from the social end of the situation, present actual social practice is so exceedingly speculative, often so entirely remote from even the slightest consideration of the facts, often so completely in terms of fantasy, that any honest effort to connect social practice with the facts of human nature cannot but better the situation. And, incidently, it must never be forgotten that the science of human behavior, like all sciences, whether physical or social, aims ultimately and basically at the solution of human problems, the adjustment of social relationships, the attaining of social values. All science is pragmatic; the social sciences no more or no less so than the physical. Any sober speculation in terms of an honest effort to allocate facts and assemble the details of accurate knowledge is better than a hit and miss, or a purely dogmatic and traditional social control. Almost any chaos, provided it be in terms of an honest effort to settle things scientifically, is better than a pseudo-cosmos in terms of artificial and false beliefs and standards which will ultimately collapse into worse chaos than the effort to right things in terms of actual facts would produce. Even to acknowledge, which is not widely done, that the science of human nature, properly pursued and adequately weighed in its findings, can and will offer solutions infinitely better than the best that authority and tradition give us when unsupported by facts, is worth while but, as we have seen in another connection, the very knowledge of human nature that psychology now has points out why it is so hard to change that human nature, particularly in its institutional and value situations. Inertia, fear, habit, personality defects,—all these things the knowledge which we now have, for all its defects, would change, but, in the efforts to initiate the changing, psychology runs up against the very facts that it itself calls attention to.

Finally, it is apparent that no mere casual change in social living or in that species of preparation for it which we call education will do. What is needed is a whole new approach, an entirely new orientation, a shift of values and of methods alike, the creation of a new philosophy of life, a philosophy which will

not, however, be a purely verbal matter as most philosophies have been in the past, but which will have a three-fold content, verbal, visceral, and motor, i.e., will be a combined and co-ordinated conditioning of intelligence and the drives in terms of which the mechanisms function. This, however, as we have said, will be developed further in later chapters.[10]

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[10] For further references in connection with the topics of this chapter, the reader should again confer notes to the chapters on intelligence, on learning, on language, and on personality and its development as a whole.

CHAPTER V

THE EXPERIMENTAL APPROACH TO PERSONALITY

1. Types of Experimental Work. 2. Instruments and Apparatus. 3. Other Measuring Devices. 4. Physique and Character. 5. Popular Characterology. 6. Summary. Bibliography.

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Types of Experimental Work. Here, as in other matters, we meet with two types of experimental work; one, more or less strictly behavioristic and objective, depending not at all or very little on verbal responses, either overt or subjective; the other depending to a considerable extent on the verbal response, either automatic or based on reflection and consideration and hence, to some degree, introspective, but not to such an extent that it is entirely lacking in objective value. Here, as elsewhere, it is a case of take what can be had, and of estimating the value and exactness and significance of what is obtained in terms of the whole body of knowledge we have concerning human nature. Still further, it may be remarked, both with reference to the value of the work, as well as the difficulties of obtaining results, that all or nearly all experimental work on the personality as a whole suffers from an even greater artificiality than most testing or measuring of human behavior, since laboratory conditions are not at all the same as actual life conditions, and since we cannot go beyond certain more or less artificial limits of safety, decorum and fitness and since, also, we cannot usually follow such scientific methods of elimination, separation, differential activity and the like as are stressed in such methodologies as, say, Mill's canons. Here, as elsewhere, psychology works against the friction of the individual, of institutionalized society and of the whole weight and inertia of the stereotypes of the past. This is no basis of excuse, but an objective explanation of the situation and a statement of the nature of the background against which the results must be judged and further efforts toward the testing and framing of these inaugurated and carried out.

The experimental work having a bearing on the meaning, the origin and the manipulation of personality varies from the experiments on children (such as those of Watson), the experiments on conditionings (such as those of Pavlov), the studies of children in definite experimental schools, in institutional or family

situations (of which there are many), to the general case histories of the analysts and the results of various special tests (Jung, Downey, Pressey) and the findings of various types of apparatus for testing intelligence and other traits,—set-ups such as the psycho-galvanometer, the plethysmograph and the like plus, finally, the theories and statements of various groups of characterologists (such as Kretschmer) who endeavor, with more or less foundation in observation and detailed correlation, to estimate personality traits in terms of postural or general physical conditions. We will consider some of these, in more detail, where they have not as yet been considered, though our treatment will necessarily be summary and selective.[1]

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Instruments and Apparatus. There is a great profusion of apparatus for "testing" traits of human nature, ranging from such simple things as "form-boards" where the subject is required merely to fit into their proper places differently sized and shaped pieces of wood, varying in complexity and number, to those where the subject, child or adult, is required to put together pieces of a dissected picture of some common scene, colored or black and white, to still more complicated puzzles, requiring exact and even laborious manipulation, or to such things as mazes or learning-problem situations of various types which we have already discussed. In the instance of the form-boards or the puzzle-boxes, it is more or less arbitrarily assumed that a given intellectual age should be sufficient to solve them, i.e., the emphasis tends to be put on the mechanism side and the trait measured is assumed to be intelligence, even though it is often frankly acknowledged that something else than intelligence is involved, and that relatively great intelligence with little drive, interest or perseverance may fail where a better motivated but lesser intelligence may solve the problem. In short, here, as in similar situations, little is known as to what the apparatus tests and how well it tests it. Again, in certain building and sorting problems, using blocks and cubes, colored or not, or mechanical apparatus, the object being to build designs from simple to those more complex, the same criticism may be made. Studies of the correlation of intelligence as measured on other scales and on these is sometimes high, sometimes low. In short, to repeat, we

[1] See, both for excellent examples of both good and bad reasoning in social affairs in general, as well as discussions concerning the difficulties and errors involved, and also, particularly, a presentation of Mill's *Canons* and Tyndal's essay on the *Scientific Use of the Imagination*, Robinson, particularly Chs. V and VI, and Appendices I and II.

do not know what we are measuring or how well the test measures it, and what relation the ability actually demonstrated, whether a simple trait or a complex, has to the total personality anyway. Once more it might be insisted that this is in no sense meant as an implication that the results of these tests or performances are worthless, or that they tell us nothing, or that work in the field should be discontinued. On the contrary, it should, it would seem, be intensified; for ultimately, as we acquire more knowledge of such performances and their intercorrelation and relationships, we will probably be able to draw general conclusions, in the light of which both separate abilities and the ability of a personality as a whole will be much better understood.

Still other tests, using apparatus other than a printed form, are frequently used. The older ergograph and modifications of the principles involved in the form of other tests involving muscular endurance and co-ordination, such as those for testing the rapidity of tapping, or the exactitude of pointing and manipulating those in weight discrimination and discrimination in other sense fields, all certainly do, by actual definition, measure personality traits, but how well, and with what relationship to one another, with what degree of inter-correlation and what degree of correlation as regards a normal personality as a whole, no one even suspects, let alone is sure. Certainly, in the hierarchy of habits and abilities which is personality, these traits or abilities do have significance, but in what way and to what degree, no one can now say. Without them, or without the ability to perform what the tests call for, we may and often do have serious defects in a larger sense; but with the ability to perform adequately in these directions we do not necessarily find an adequate personality in the larger sense. They may indicate the *sine qua non* of the lower aspects, the basis on which other things are built, but they do not, as such, measure personality in its larger sense, either separately or as a sum total.

Another type of test is the so-called galvanic psychometer, or psychogalvanometer, i.e., a device which measures what are called psychogalvanic reflexes. Where the other forms of apparatus we have just discussed have concerned themselves primarily with motor or verbal expression, the psychogalvanometer concerns itself primarily with certain changes in the conductivity of the organism when and if performing a given act, i.e., is more concerned with the emotional and non-motor aspect of behavior. The instrument, of which there are several different forms, measures the amount and direction of the variations of an electric cur-

rent in connection with the resistance of the body through which it passes, and which can be made to register, through the interpolation of a mirror, on a photographic film, thus making a permanent record. Measurements have been made of the effects of problem solving, emotional stimuli, various types of perception, various forms of embarrassing or interesting or exciting questions or situations, and the like. Theoretically, the deflections shown on the instrument are due to the lessened or increased conductivity of the skin of the subject and these changes, in turn, are due to visceral and glandular changes in the organism brought about by, or reflecting the effects of the stimulus. Lowered resistance of the skin, shown by a rise in the galvanic current is associated, theoretically, with increased enervation and greater preparedness to react to a stimulus; increased resistance and a diminution of the flow of current are assumed to be associated with lowered enervation and greater resistance to reaction, —relative unpreparedness. Neutral or indifferent stimuli (reported to be so introspectively), give rise to little or no changes in current; those arousing emotional reactions (again taking into account, introspection), are associated with galvanic changes that are sometimes very great. While this is a general summary of the theory of those more or less in favor of the diagnostic value of the galvanic reflex thus elicited, there is much criticism, and a considerable body of readings and findings that contradict what we have presented. It is doubtful, for example, in the light of recent checkings and investigations, whether such deflections and variations of current which were formerly considered as evidence of emotional "complexes" are due to such psychic causes or whether they are not due merely to general conditions unrelated to the complexes and capable of being elicited apart from them and sometimes not shown even when they exist.

The plethysmograph, an instrument for measuring changes in the volume, say, of the hand, due to increased flow of blood to it, and experimentally observed and recorded by immersing the hand in a closed system of water connected up with a tambour and kymograph with resultant diagnostic curves in terms of changes in the hand-volume, is also used extensively to show emotional situations, but with much the same criticism. The sphygmomanometer, recording changes in blood-pressure; various devices such as the sphygmograph for recording, again in wave form on the kymograph, such phenomena as the length, height and variations in the pulse; the cardiograph, an instrument for recording the same directly in terms of the functioning of the heart; the pneumograph, for recording the variations in

depth, length and minor fluctuations of breathing; and various other devices, all do most certainly show that the organism varies in its behavior as regards breathing, pulse, blood-pressure, electric conductivity, temperature, and also in a host of other ways under varying situations, and complex stimulus conditions. But there is no conclusive evidence of exact correlations among such phenomena or demonstrable correlations between such types and variations of behavior and the existence of definite personality traits. Like the Indian device (whether fact or fable) which finds the guilty one in terms of the inhibition of the flow of saliva, sometimes they work, sometimes they remain silent, sometimes, apparently, the evidence points to conclusions directly contradicted by incontrovertible fact. But, like the simpler devices we discussed in the previous paragraph, they are undoubtedly of real value, probably of much greater value since they deal with more profound matters and with more complex conditionings, and certainly worthy of continued and detailed study.

But it is undoubtedly true that whatever facts and correlations may exist between stimuli, past conditionings, present emotional sets and attitudes, and the objective tracings obtained with any or all of these instruments, the knowledge of them at present is not such that they can be used everywhere and always, as infallible tests, or even as of high degree of reliability. On the other hand, we cannot entirely refuse to consider them, and, for all their inaccuracy, they are more than worthwhile. In the hands of a careful observer and experienced manipulator, with ordinary subjects, it is fair to say that reasonably accurate conclusions can be drawn from the results of the instrumental findings, though where no such findings exist, no conclusions can of course be drawn. Yet the time is certainly not ripe for the general practical introduction of such apparatus into the legal and penal situations, where dependable and demonstrable results would have to be guaranteed.[2]

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Other Measuring Devices. There is another group of measuring devices for personality traits used either in conjunction with some of the apparatus we have already described, or independently. Thus, the so-called association test, which we have mentioned previously in discussing the contributions of Jung, is often used in connection with the psychogalvanometer, sometimes independently. Probably the coincident use of the psycho-

[2] See Wechsler and Smith in general. See also Poffenberger, Chs. XVII to XIX; also Myers, Muscio and other texts on vocational diagnosis.

galvanometer adds little to the diagnostic value of the association test, though the reverse may not be true. The test consists of the oral or visual presentation, singly, of a series of some hundred words, the subject being required to give, as response, the first word, phrase or sound which "comes to mind," no matter how silly or unconnected it may seem and regardless of whether it makes real or apparent sense. The responses to such a list of a hundred words, in the instance of at least one standardized test, have been highly subjected to analysis and classification, so that it is possible, on the basis of knowing what hundreds of others have given as a response, to classify an individual's reaction to one or all the words of the list. The subject's normal verbal reaction time is also ascertained, so that unduly prolonged silences, or unduly quick responses can be noted. On the basis of this time element, and the type of response, whether a word is frequently repeated in response to other stimuli, whether rhymes are frequently used, or phrases, or repetitions of the stimulus word, or nonsense syllables, and with reference to still other conditions, it is theoretically claimed that the complexes, inhibitions and emotional peculiarities of the subject are indicated. Cross references between succeeding responses and stimuli afford further diagnostic grounds, and subsequent detailed investigations of peculiar and particular responses afford still further opportunity for the discovering of complexes and inhibitions. Provided that the experimenter does not suggest into the situation the suspected responses, provided his part is purely objective and consists of observation and statistical comparison of responses, it is fair to say that such tests do indicate much concerning the general emotional traits and patterns of the subject. Jung, in his voluminous work on the subject, claims to be able to distinguish various major and minor types of abnormality on the basis of such tests, finding distinctly characteristic forms of response for the various neuroses and psychoses.

It is worth noting that, while extremely artificial or special circumstances will affect a subject's attitude, so that any peculiar environmental conditions of the moment will undoubtedly color some of the responses, and while a special set of the mind, due to immediately preceding circumstances will certainly inhibit what might not ordinarily be inhibited and vice versa, none the less, when such conditions are as far as possible avoided and the subject tested in what might be called a normal situation, the responses given will tend to be repeated under the same circumstances at another time. That is, there is fairly definite preferred association between one word as stimulus and another

word as response or, better stated, there are fairly definite verbal patterns which tend to be constant for a given individual unless some special condition momentarily changes them. This is indeed the theoretical assumption on which the test is based, namely, that motor experiences (in the past) with their emotional accompaniment have been recorded, in part, as verbalizations, and that hence any work reminiscent of the experience will produce, as partial response, a word related to the other parts of the situation plus the emotional coloring originally occurring in experience. Where words stand for experiences in which there was normal, uninhibited, unemotional reactions, the response is stereotyped, like that of all others who likewise went through the experience related to the stimulus word with normality. Thus, to table, normal responses would be, chair, eat, dine, food, family, and the like, but responses such as poison, fear, hide, hurt, and the like, to use exaggerated though not infrequent examples, would be non-normal if not actually abnormal, and would require and properly receive further investigation as to the specific situations of their origin. The so-called normal associations, then, are more or less innocuous; it is the abnormal responses which are individualized.

All this, as a matter of fact, works out better in practice than many of the instrumental techniques and procedures discussed in the previous paragraph. Pragmatically speaking, complexes are usually indicated by the verbal responses that are off the beaten track, some few being explicable, as pointed out, because of peculiar settings, mind-sets or the circumstances of the moment, and indicating their non-emotional character on investigation. And, it is also interesting to note (again practically) that abnormal responses cease to be given once the individual has come to make overt normal adjustment with reference to the situations and objects mentioned in the word-list; the normal individual, when in a normal condition, does make normal responses, i.e., responses which are like those of others in the same situation, and—lacking in any special or pronounced emotional accompaniment. This is to be expected, for normal means, here as in other similar situations, what the majority do or are. It is noteworthy, from this point of view, that situations that arouse more or less universal emotional and non-adjustive responses are just those which, when represented by stimulus words, arouse the greatest test disturbance among the greatest number of individuals.

Another type of verbal measuring device is the so-called selective, cross-out test, in which the subject crosses out, from a list

of some 125 words, all those that carry with them a halo of unpleasantness; from another list, all those that stand for things that to the individual are wrong, or wrong to do; from another list, all words that stand for things or objects or situations or acts concerning which the subject has or does worry and responds to emotionally rather than adjustively in the objective sense. Each of the groups of 125 words is arranged in such way that, though apparently in random order, it is actually true that there are five groups of 25 words each referring to aspects of some general problem such as sex, health, relationship to others, religion, and the like. It is observable, in practice, that most individuals in crossing out, say, the "unpleasant" words tend, without seeing the arrangement or noting the constant return to words having reference to a particular problem and emotional attitudes toward it, to actually cross out more words in one or more of the sub-groups. Thus, one individual, crossing out a total of some 40 words from the 125 may cross out 30 of this 40 rather evenly divided between the religion group and the sex group, paying little attention to and finding little or nothing unpleasant in the words referring to other major situations of life and experience. Again, in say the "worry" list, some individuals will cross out more words referring to sex situations than to any other, perhaps than to any two others. On the other hand, some individuals will tend to be normally unconcerned or non-worrisome, in the sense that they worry little about anything and hence, in the list, mark all groups fairly equally and yet show a low total. Again it should be remembered that such tests must take place in reasonably normal circumstances; thus, where a person would normally have marked few words, say, in the sex group, were he to take a test immediately after a lecture on the dangers of sex he would probably not give a response that is in terms of his usual emotional attitude. Still further, it is fair and necessary to say that the test, at best, is introspective in some sense of the word, but becomes particularly so, and to such an extent that the returns are valueless, if and when the individual is allowed to debate, reflect, or muse over the responses, i.e., the words crossed out. The test must be done as spontaneously as possible, without any reasoning or reflection for, of course, in the light of reason and verbalization, which the test is emphatically not supposed to measure, nothing is better or worse, more or less worrisome, more or less pleasant; to the (theoretically) "pure" mind or intellect, since it is merely a mechanism, nothing has greater or lesser significance. Emotional reactions are not logically critical reactions, hence to get

them the logical or merely verbal element must not be allowed to dominate the situation.

Still another type of verbal test aims to measure the tendency of the individual toward introversion or extraversion, in Jung's sense, in which the subject is required, again with all the provisos and cares and restrictions listed above, to indicate whether he does or does not, and on the whole to what degree, indulge in each of a long list of acts, such as blush, put off decisions, ask for advice, keep a diary, indulge in day-dreams, finish tasks begun, and the like. Other tests on the same general principle, by virtue of listing types or traits of conduct representative of the neurotic, the hysteric and other types of personality, and through the same scheme of self-rating on a list of questions, purport to measure such abnormal traits or at least to indicate toward what type and in what degree the subject tends. Such tests again depend for their norms and standards on the performance, relative to some list of questions and as checked up by other tests and other considerations, of a large, unselected group of people. That is, here as elsewhere, where there are no external standards, it is the best that can be done, and even granting that all the results are extremely relative, they are still evidences of the degree to which, under test conditions, a given individual varies from the performance of others.

Still another type of test uses what might be called a combination of the mental and associational or verbal with the motor. Thus, one test requires the subject to write his name large, small, fast, slow, and to "copy" several unusual types of hand-writing, both slowly and with great speed, and again while also counting, or tapping or indulging in other non-related behavior. This particular test is, in a sense, a modification of straight graphology, a subject which has had great vogue in less critical circles, and which has been variously classified with the mysteries of palmistry and the exactitudes of finger-printing. Applying the fundamental assumptions and principles of a scientific psychology to the matter of hand-writing, several things are evident; first, an individual's writing is a mode of motor expression, based on the structural peculiarities or the nervous and muscular system plus the conditionings of training and habituation plus, finally, the modifying or controlling elements of the medium used, whether paper and ink, or slate and chalk, or whatever tools are handy. Secondly, such motor expressions are very individual, so that, to the expert, it is impossible to confuse a forgery with an original. Thirdly, not only is writing personal and distinguishable, but it is indicative of the emotional conditions and intellectual level and

cultural attainments of the individual. Hand-writing, like every other act of the individual, is determined, an inevitable result of all the factors entering into the career and the origin of the individual. All this, as theory, is certainly to be granted if we think in terms of a science of human behavior; it must be granted that slope, size, design, thickness of line, and all the other elements of penmanship are indicative of what the individual is, but to be able to point out that this trait in penmanship is the correlate of that trait in personality is another and far from well-told story.

As in the case of the other tests we have just discussed, and as with the efficacy of the psychoanalytic method, so also here; the practitioner or experimenter, when skilled and experienced, can come to many conclusions which later and independent evidence justifies, but for which he can offer no or very insufficient theoretical justification. That is, here as in other instances of analysis of traits of personality, no structural background can be definitely pointed out, no fundamental reasons given, and the results cannot be correlated with other findings except on a practical level. For example, apart from speculation, we can give no reason why individuals who are relatively inhibited should write vertically or back-hand, and those with greater extraversion of emotions with a slant, approaching hysteria as the slant becomes too pronounced. But careful investigations through other tests and techniques concerning individuals who do so write show that this is probably true. Nor do we know why individuals who worry also tend to write slanting down-hill, but it is an observed fact that they do, other circumstances being equal. So that, in the present state of the knowledge of writing as indicative of personality traits, there is merely a crude empiricism, and not at all an exact knowledge of causes and effects. But, as with the other tests, this is in no sense a reason why they should be abandoned, but rather an excellent reason why investigations should be pursued in the field until adequate knowledge, if obtainable, is actually found. While it is true that most of the so-called texts on the subject, with the exception of a few by foreign authors and two studies by university psychologists, are practically a hopeless mixture of theoretical credulity and ignorance plus often surprising practical insight, that is no reason why a fruitful field should be neglected, or judged merely in terms of popular approval or prejudiced dislike.[3]

[3] See Jung for detailed analysis of various types of response to the association tests. See Kent and Rosanoff for standard tables of normal responses. See Pressey's so-called "X-O," i.e., "Cross-Out Test," Downey's test for "Will-Temperament," Laird's "Personal Inventory Tests," B2 and C2, for introversion and other character traits, all obtainable from the

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Physique and Character. Still another effort, and one which at first sight seems perhaps more likely to be productive of demonstrable objective results, is that concerned with the correlating of external structure and glandular peculiarities with personality behavior-traits or integrations. To be sure, the earlier efforts of the Lombroso school have long since been, in large measure, discredited as exact and inevitable bases for judgment; but the newer approaches are by no means so crude, by no means concerned merely or even primarily with intellectual traits, and do not concern themselves merely with native, inherited peculiarities of structure, but to a considerable extent with those modifications which can be shown to have been produced by experience and hence are symptomatic of that experience which must also have conditioned the patterns responsible for the behavior of the personality. The difficulty is that there are so many symptomatic physical traits, their inter-dependence is unknown, their individual significance uncertain, while how to separate inherited from acquired traits is not clear.

Such efforts as these, endeavoring to find correlations between structures as observable and personality traits as inferred or observed may, of course, vary from inconsequential superficial nonsense to such profound and careful efforts as those of Kretschmer, who makes what is almost a microscopic examination of all physical traits such as the surface indications of the skin, its color, the hair development and its distribution, the shape and characteristics of the head, the correlated results being offered as a basis for a systematic classification of personality. Miller carries the work of the former even further, endeavoring to show the neuro-vegetative foundations of the various types of mind and body which Kretschmer builds up on the basis of an inductive study of normal and abnormal personalities and their family history and affiliations. Into the details of these systems we cannot here go, but both show promising possibilities of turning speculation into fact and substantial, objectively justified generalizations.[4]

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firm of C. H. Stoelting, Chicago. See, also, for psychological background of graphology, particularly Downey, Saudek; and for an objective, psychological presentation of some correlations between penmanship traits and personality traits, see Land's University of Buffalo Study, *Graphology: A Psychological Analysis.* See also, *Problems in Personality,* Ch. XII, *Handwriting in Nervous Diseases,* by C. L. Dana, and various specimens of the penmanship of abnormal personalities in standard psychiatric texts.

[4] See Kretschmer, Miller, Crookshank. See Schlapp and Smith, Bk. I, Ch. III for criticism of Lombroso school.

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Characterology. We mentioned, above, that there are many other systems and pseudo-systems which purpose, in the language of the man of the street and in terms of folk-lore and tradition, to furnish a basis for the reading of personality in terms of the physical traits which an individual exhibits. While it is undoubtedly true that there are many sharp observations and real facts hidden in such pseudo-systems, it is also as undubitably true that they are all more in terms of superficial resemblances and occasional correlations than in terms of scientific observation and exact knowledge. Assertions or beliefs that a big chin denotes will-power, and a sharp nose inquisitiveness, a square head health, and large ears lack of culture, large hands and feet poor breeding, and blue veins delicate heritage, fail to take account of the additional fact that such traits are largely a matter of crude structure, are little or not at all modified by experience and, finally, have perhaps as many exceptions as hits. It is good to observe, however, that the public in general, in its efforts to understand character and ability, is no longer so optimistically relying on such crude efforts at diagnosis and analysis as they have in the past. In short, what little is known of an exact nature in the matter of personality measurement is being gradually spread into all walks of life and one no longer finds such emphatic belief in the crudities of an earlier characterology.

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Summary. It is perhaps fair to say that the whole subject of the measurement of personality and personality traits has now a healthy scepticism and an equally healthy interest in pursuing what little is known to further conclusions. It is beginning to be universally recognized that all personality traits, whether they are called spiritual, mental, emotional or physical, are emphatically based on definite, physical structure; on chemical, electrical, bio-chemical functioning of protoplasm, and in no sense or in any case are freely floating, independent or semi-independent entities or powers or abilities. It is also becoming generally known that personality traits of whatever kind, while they have this structural foundation, are also a matter of environment in the sense that, with a given structure at birth, the type of education in the larger sense has considerable if not indeed everything to do with what results from the given heredity through modification and conditioning. Also, considerably more faith is being shown in the slower but more careful and exact reports of ex-

perts and there is now less tendency to rush off in terms of the promised immediate results of the more popular expositions.

Incidently, while there is no use in recalling here in detail the various arguments and criticism and the final conclusions of the detailed examinations of such topics as language, introspection, images, patterns of visceral, emotional and motor type, it is clear that whatever is cogent in such conclusions to the use of tests must be taken into consideration. It has often been objected that such tests as those described in Section 3 above, which function entirely or almost entirely in terms of verbalizations, do not and cannot give any insight into any but verbal problems. Fact and observation prove this to be false, but it is true that it is only too easy to rush to false conclusions if care is not taken to avoid them. Verbal responses may and often do indicate other parallel patterns of response, but their existence must be checked up and not just assumed on the basis of the mere verbalizations.

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"Our business here is not to know all things, but those which concern our conduct. If we can find out those measures whereby a rational creature, put in that state in which man is in this world, may and ought to govern his opinions, and actions depending thereon, we need not be troubled that some other things escape our knowledge. This was that which gave me the first rise to this Essay concerning the understanding. For I thought that the first step—was to take a survey of our own understandings, examine our own powers, and see to what things they were adapted."

LOCKE

CHAPTER I

THE PSYCHOLOGY OF DELUSION AND BELIEF

1. The Psychology of Belief in General. 2. The Function of Beliefs as Adjustments. 3. Delusions and Beliefs. 4. Dis-Satisfaction and Compensation. 5. The Magnification of the Ego. 6. The Pathology of Beliefs. 7. The Relation of Man and Nature. 8. Summary-Prospectus. Bibliography.

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Psychology and Belief. We all "believe" many more things than we "know," however we define these elusive terms, and even what we most fondly claim to know best is often still, in a proper sense, a matter of some degree of belief. For belief is of varying degrees, varying levels, varying types and, like all things in human experience, shades through many forms from what we call "exact knowledge" to what we call "sheer delusion." Sometimes what we call either knowledge or belief is fragmentary, unorganized, ephemeral and more or less inconsequential; sometimes it is highly classified and ornate, a veritable structure of art as well. In the one case we might speak of personal knowledge or belief which could be but is not necessarily shared with others; in the other case we call the structures philosophy, religion, science. It will be our purpose, in this introductory chapter, to see what we can of the general psychological processes underlying or accounting for the belief attitude and then, in subsequent chapters, to examine, separately and in more detail, some of the more general systems of belief: religion, philosophy and science and, from another but related point of view, the nature and significance of art and beauty and the place of literature in the life of the individual and the group.

Belief has real biological, psychological and sociological significance; it is a phenomenon which is universal, without which it is inconceivable that either social or even individual experience could continue. It has its constructive as well as its destructive side; its greatness as well as its pathology; it can be dynamic and creative or static and stagnating. It can make life worth while or rob it of its beauty and sweetness. And, like all other forms of human conduct, it has its basis in definite structures plus the modifications of experience; to believe is to behave in a certain definite way toward certain definite stimuli; to disbelieve is

equally a form of definite behavior, and both belief and disbelief involve, as do all other forms of behavior, the operation of receptors, connectors and effectors. Belief is a response of the organism; a learned response.

We have frequently remarked that two things are perhaps necessary at this period of the development of the science of psychology; first, greater exactness of definition, experiment, observation and the like, and secondly, a more synthetic and more inclusive survey of the results of the concrete work. The former gives us the facts; the latter, in the sense of controlled speculation in terms of the facts, tends to give us the meaning and to relate to one another the findings in various and perhaps widely separated fields of research. In a certain sense what we need is a philosophy of psychology, a point of view which, while not losing sight of concrete facts, is yet not unable to manipulate them; which neither creates in terms of fantasy and wish, nor yet remains in despair in the face of the isolated facts. No science has progressed without such controlled creative thinking or speculation, such controlled and yet flexible molding and manipulation of materials, so that each science, as it has developed, has come to have a philosophy also. But psychology, for various reasons, some of which we have discussed, most important among them being perhaps the fact that psychology was once all speculation and, secondly, its present situation as a younger companion of older disciplines which have won their authority, hesitates to even think the mere word philosophy. And yet, without question, some problems properly called psychological will never be solved through the mere accumulations of however so many facts, but only in terms of an honest and objective effort to marshal them into a constructive system of thought.

As we have progressed through the various chapters of this book it has been apparent that, the farther away we get from the simplest and most fundamental elements of human behavior, the less we know and the more difficult it becomes to even suggest a theory that will at one and the same time be in accord with reality and yet give to the facts a meaning and a value in terms of their relationships. Particularly true is this with reference to the elusiveness of personality and the theories concerning it, and it will be equally true concerning the material of this and the succeeding chapters. What we shall have to say cannot be proven, and will involve considerable speculation, but so long as that speculation is in terms of and not contradictory to experience and the facts of structure and the experimental material, it may serve as a beginning for more and better and more exact

work. We can demonstrate the structures involved in a reflex; we cannot do more than vaguely suggest those involved in so complicated a sort of behavior as a belief in ghosts, though we can often point out the emotional elements present in the situation, the items of past experience which have contributed to the forming of the patterns of the belief, and even the part the belief plays in the total adjustment of the individual to the complicated social life he leads.

It is difficult to even define the words we must continue to use in this chapter, particularly the word "belief". Perhaps some examples will best enable us to make clear the significance of the term. Thus, we believe that Columbus discovered America in 1492, that two and two always did and always will make four, that there was or was not such an individual as Moses, that the groundhog's shadow has or has not some relation to subsequent weather conditions, that camphor hung around the neck will or will not keep the "flu" from attacking us, that walking under a ladder is sure to bring bad luck, that a rabbit's foot, properly treated, will bring good luck, and so on through a multitude of things in which, to some degree, we believe or disbelieve. And disbelief is, of course, a rival and contradictory but equally positive belief. To be sure, some of these are called historical facts, some are mere superstitions (for those who don't believe in them), still others, so-called religious facts. A given individual might place the above beliefs and a host of others more or less in the order of their credibility for him, from such beliefs as he thinks all should share, to those in which few, if any, should believe. Thus, probably all individuals believe that Columbus discovered America in 1492, except those who have never come in contact with the evidence or have been indoctrinated with a rival belief; on the contrary, relatively few believe that a rabbit's foot has anything to do with luck or the ground hog's shadow with the weather. In other cultures we would find another list of beliefs ranging from those of almost universal to those of relatively slight acceptance.

But, if we take even the best founded, the most substantial, the best authenticated, the most widely adhered-to belief, we can, under certain circumstances and in certain moods, and under the influence of some trains of thought and some purposes, doubt even it, and may actually go from the state of balance to one of the opposite to the original belief,—disbelief. All conversions where an individual is won over by argument, are instances of such a change of belief. Some go from one belief to another as if

changing a diet or clothes; some stick to a given set of beliefs from adolescence to senility. Anything may command belief; belief may be denied anything. We can believe uncritically and indulgently; we can be ultra-skeptical and endeavor to refuse belief in everything. But we can only endeavor, for believe something we must; though what we believe, what we give assent to, is largely a matter of opportunity and circumstances and, as we have already pointed out, is sometimes a matter of deliberation and conscious realization, sometimes something less explicit and conscious. To the proper query as to how a belief can be unconscious, it will be best to answer by a tentative definition of the word in question. First of all, however, the whole discussion on language, on introspection, and particularly the sections on the nature and inter-relationship of verbal, visceral-emotional and motor patterns of behavior should be recalled for, as has perhaps been noted, the psychological principles involved in these earlier discussions are fundamental to much else in the field of human behavior.

However we use the word belief, it is certainly not necessary to confine whatever meaning we give to merely the verbal aspect of behavior; there is a motor aspect to the meaning of the word belief, and an emotional one also, and while it is true that the verbal is usually the one that is discussed, the others must not be ignored or forgotten, and are often, as a matter of fact, the most important. From the point of view, then, here being developed, a belief is, or is shown to exist by, a reaction to a situation "as if" it were (though it is actually and factually not), what it would verbally be reported to be upon questioning; a reaction in terms of an assumed truth and fact, which assumption in turn is often related to many others. When we act in terms of the belief that to break a mirror means seven years bad luck, we act "as if" it were proven, "as if" it were demonstrated fact, "as if" it were actually and positively true and would say so if asked. Our conduct, whether motor or emotional, with reference to walking under ladders, if we believe the ill-luck superstition about such an action, is "as if" the belief were true. We act in terms of the expected and believed-in results. To be sure, language is awkward; perhaps it would be even better to say that an individual we are observing acts as if what he believes about a certain thing were actually true. Such an individual's conduct, motor, visceral and verbal, with reference to ladders, mirrors, rabbit's feet, and the like is what it would be were what he believes really fact.

In short, some of our behavior is based upon such first-hand

acquaintance with the facts, so uncolored by preference or interpretation, so exactly in terms of actual conditions as they are demonstrable and observable, that little or no belief is involved; this is really what we mean by first-hand, immediate, concrete knowledge. On the other hand, some of our behavior is based, not so much on verifiable fact, not so much on demonstrable evidence and observable conditions, as on what we would like to be the facts, what we would prefer to be the conditions, or what we have, incorrectly, and for whatever reason assumed to be the facts and conditions. Such behavior is emphatically belief behavior, and while it is certainly impossible to draw a sharp line of division between the two extremes, since each shades imperceptibly into the other, it is equally impossible to deny that some behavior predominates in factual reference, and other behavior in non-factual. Belief in the emphatic sense of the word, depends little or not at all on facts which can be demonstrated and shared and verified; belief rather involves behavior or readiness to behave in terms of assumed conditions, which assumptions favor and encourage the consummation of thwarted and balked drives and needs, not necessarily as would have been the case had the facts been different and allowed overt consummation, but often in terms of symbolism, in terms of deferred expression, and the like.

The word belief is intimately connected with other words which, on the whole, we need not discuss in detail, since what is at issue in belief is also at issue in what these other words mean or imply, though with changed relative emphasis. Thus, perception, judgment, inference, and belief shade, as it were, from one extreme to another, perception being a report relatively completely in terms of the data offered at the moment, judgment having less immediacy of data, inference still less and belief least of all. Thus I report that I perceive a rose, or I judge that roses cost so much a dozen, or I infer Jones likes roses from his conduct, or I believe roses keep ghosts out of a room in which they are placed. The difference is not a profound or qualitative one, but rather of relative emphasis on the immediately given, and there is no need here to go into details on the work done on each of these terms in the literature of psychology, particularly since there is not any great uniformity in the matter anyway. It is also noticeable that one may act "as if" in the case of perception and, if an error has been made, the result is illusion, and so, too, in the case of the other terms; one may judge, infer, and believe, "as if" facts were as understood, expected, verbalized, attended to, assumed.

Now, in this sense of the word believe, the "as if" sense, it is quite clear that we are always and everywhere thus acting, and that our actions are the overt sign and indication of the belief, so that one may, within reason, read the beliefs of an individual in terms of his conduct. To be sure, there are, as will be seen, many complications in the situation and, if we would avoid undue or unnecessary or unwise introspection, we will not press too far the effort to get an individual to give the verbal side of the beliefs corresponding to his behavior, because they are often non-verbalized, or in terms of some other more general belief that would be shown in other connection, but which would often not be verbally offered on the occasion of some minor act that actually comes under its control, though not consciously or deliberately so.

Thus, if one were to ask the passengers riding in an elevator to the top of the Woolworth Building, what are the beliefs concerning their present conduct, one would probably meet with few sensible or significant accounts, but it is certainly true that, however conscious or unverbalized or unconsidered, one belief is that the elevator will not fall. That is, expressing it better for our present purposes, they act "as if" the elevator is safe and would, if properly questioned, in the majority of cases, express verbally a confidence in the elevator and a belief that it will carry them safely,—though of course they may be wrong. As we have said, some beliefs have much in the way of past experience to justify them, some have little and some, perhaps, have none at all or so little that it is inconceivable to others how a belief can be formed on the subject at all. Naturally, as we shall see, some beliefs go to such extremes that only abnormal situations or abnormal personalities give rise to them, or act in terms of them.

Putting the matter still differently, a belief is a basis of action, of actual or possible action, whether verbal, motor or emotional, and is the result of teaching, conditioning and previous experience, and may have little or no reference to actual objective facts of the environment. Beliefs, like customs or like language, may be taught, carried on from generation to generation and, as such, become part of the basis for action and adjustment of each succeeding generation. Personal experience of the individual may change or may seemingly confirm them, or may cause the formation of new and individual beliefs, all of which may become systematized or remain relatively non-interrelated. And these beliefs have real value, or at least apparent value, to the

individual and the group regardless, sometimes, of whether they are true to facts or not.

In order, however, to clear up any real or apparent ambiguity as regards the definitions and the arguments of this chapter on the general psychology of belief, it will pay us to expand the discussion somewhat particularly with reference to the relationship of belief to fact and to purpose. With any given set of environmental facts and conditions (as observed and determined apart from beliefs), and also with any given set or series of behavior acts with reference to them on the part of many different individuals of a large group, one must yet realize that such acts, even though the same as regards an objective description, may yet have very different adjustive values for each individual, depending on the beliefs in terms of which he is acting, the drives or purposes which he is endeavoring to consummate; in a word, the dynamic purpose of his whole personality, at the moment and in the particular situation. To return to the example of the individuals in an elevator carrying them to the top floors of the Woolworth Building, while they all roughly agree, as regards overt behavior, and probably all would roughly agree as regards some minor belief elements of the situation, they all could yet differ in other belief-aspects. In fact, it is at least conceivable that one individual might well have the belief that the car will fall, and thus end a life which he either has no courage to end or hopes will be ended without effort or manifest intent on his part. Belief, in short, involves purpose; it is an attempt, in terms of the conduct involved, to solve a problem, make an adjustment, consummate a drive or need. Other individuals, as part of the complete belief behavior involved, may be planning to consummate a desire to see the panorama of the city from the roof, others to interview an individual on the top floor to which the car will presumably take them, and so on. Nor, it is true, will the majority of these simple and constantly acted on "as if" attitudes usually be particularly conscious; these examples are patterns of almost automatic response to a situation, and only direct questioning or detailed analysis would reveal the belief aspects of the behavior, simply because the belief aspect is, in the instances deliberately chosen, small and relatively inconsequential in comparison with the larger beliefs also functioning and the larger purposes which the individuals are striving to consummate and to which the relatively simple beliefs in question are merely accessory.

But the point is that it is the purpose, the expected and acted-upon, assumed and believed-in significance of the conduct, that

makes it a matter of belief, and while, as we have said, this "as if" attitude is more or less co-extensive with all behavior but the purely reflexive and the completely automatic, it assumes, now and then, and in certain situations and circumstances, a predominant and preponderating value; in short, here as elsewhere, no sharp lines can be drawn; all behavior, with the exceptions noted, showing some degree of this type of adjustment, shading from that more or less insignificant and non-critical, to that emphatically and essentially in terms of belief patterns. And belief, in the larger and important sense, it should be insisted, is emphatically a personality reaction or response, involving all types of patterns usually, but now emphasizing one, now another, whether verbal, as when we express our beliefs in words, or motor, as when we overtly behave in terms thereof, or emotional, as in instances of inadequate, improper or exaggerated visceral responses which do not indicate realistic, but "as if" conditionings. Nor should one ever forget, in discussing belief, the comparison of behavior in terms of percept, judgment, inference and belief; each embodies, or may embody some "as if" elements, progressively becoming more emphatic and characteristic as one goes from percept to belief, and involving, also and parallel, more and more of the larger re-action patterns of the personality, more and more of the dynamic purposive-adjustive, problem-solving activity. And we shall make it clear that, in the instance of religious beliefs, while the situation is tremendously more complex than in our present simpler examples, and the behavior correspondingly more detailed and complicated, the same bases or mechanisms, the same type of behavior is exhibited, though on a larger scale and with a deeper perspective. And only if and when the individual, in a religious situation, is responding as a purposive, adjusting, striving, consummating unit or personality to the religious situation as such (or at least practically and pragmatically so, allowing for conflicts, doubts, and rival beliefs), is his conduct really in terms of belief relative to religion. Only when a personality, as a personality, adjusts and consummates in terms of the symbols, the situations, the expected results of a religious situation, he is acting in terms of religious belief. But to this we will return.

But there is also another point to be emphasized, though we have touched on it previously in our discussion of belief in general. The belief that the elevator will safely carry us to the desired place is founded on a realistic, a scientific survey of experience, even if not deliberately so analyzed and characterized by the individual. It is belief in terms of adequate and sound and mutually agreed-upon and reasonably demonstrable facts, and

overt, objective conditions. As we proceed from such relatively simple beliefs, with such sound and empirical bases, to those of a more complex and more involved, less immediately demonstrable and empirically referable nature, the greater the emphasis becomes on symbolic and substitute and indirect evidence, if evidence it can be called at all. Some beliefs, like those which carry us through the trivial aspects of every-day experience, have much in the way of fact to support them; some, as in the instance of superstitions, delusions and the like, have little or none that would appeal to other individuals lacking our own particular need for adjustment in terms of the beliefs in question. If and when a belief is constructed largely or entirely in terms of needs and with little or no reference to facts it remains to be sure, a belief, even if we also call it a delusion, but then takes on aspects of compensation and symbolic, substitute, second-hand adjustment which the simpler beliefs do not show, or only to a negligible degree. It is, naturally, this aspect,—the creative, the symbolic, the substitute, the non-factual, which concerns us primarily in our treatment of religion, philosophy and the allied problems of this part of our discussion. Some beliefs are almost identical with facts; others are almost altogether in terms of fantasy, need, desire, symbol, and make-believe,—though just as emphatically mechanisms of adjustment to a problematic situation.[1]

[2]

The Function of Beliefs. When we regard genetically either the structure or the behavior of the individual or the social group, we see that each progresses from simple to complex. Where once, in the group or the individual or in life itself, simple devices sufficed for adjustment, complex devices with complex structural bases have come to be added to them. In the individual, reflex and simple native responses suffice till such time as the increasing complexity of stimuli meet with a prepared and developed modification of structure, and conduct begins to take place in terms of acquired modes of response. We discussed this, in part,

[1] On the psychology of belief as a general subject see Hollingworth, particularly Chs. XV and XVI; Vaihinger, particularly General Introduction; Pt. I, Basic Principles; Part III, Ch. III., Sect. D, The Will to Illusion. See also, for more philosophical treatment as a general subject, Balfour's writing. See Robinson for such illustrations in science as hypotheses and assumptions. See Jastrow for a general psychological treatment on a broad scale. For treatment of the linguistic and logical aspects of thought and belief, see Ogden and Richards, Rignano, particularly his chapters on pathological material. See Bradby for Freudian and psychoanalytic treatment in terms of wish and desire. Confer, also, illustrations of primitive beliefs in Murphy, Levy-Bruhl, Summer. For concrete illustrations of the functioning of belief in case histories, see Stekel, Oliver, Hillyer, Beers

in our treatment of learning and learned responses and, in part, in our treatment of the nature and function of intelligence considered as a mechanism.

In this same sense, beliefs are mechanisms, are ways of adjusting to experience, are complicated learned responses to situations and, as such, often have value to the individual, whether objectively true or false, and even enable him, as well as the group, to enhance life and find satisfaction. Perhaps we had better not yet commit ourselves too uncritically to the phrase "true or false," for there are many qualifications which will have to be considered in that connection. Beliefs function constantly and ubiquitously; the examples we have already given show how and where belief may be, together of course with other factors, a basis of action which might frequently be inhibited, at least without great drive pressure, were the belief absent. Thus, to again take simple and everyday instances, the belief that a train will be safe and on time, leads us to postpone going to an important function until the last moment; the belief that a driver is careful will enable us to relax and not interfere with driving, and to inhibit emotional reactions in connection with other nearby cares; the belief that an individual is judicial and fair-minded will suffice for us to allow him to adjudicate disputed matters, yet while we act "as if" in all these situations, we may have little or no real factual evidence. On the other hand, to take larger and more important instances, it often is said that only the belief in the moral order, or in the existence of God, or in reward and immortality after death, suffice to make life worth while, and it is also believed that many people would commit suicide were such beliefs taken away from them, i.e., were indisputable evidence offered that showed such beliefs to be erroneous. Again, it is said, that only the belief in divine punishment keeps many people law-abiding and moral, and that the belief in the inevitability of capital punishment alone suffices to deter many individuals from murder; that did they not act "as if" the believed results would follow, their conduct would not be in terms of the socially demanded norms and standards. And yet, in all these instances, cogent and satisfactory evidence, observable and demonstrable, is lacking.

In short, whether important or trivial, true or false, beliefs have an adjustment value. It remains to be considered, in a later paragraph, whether the usual current beliefs are the most valuable, the most adjustive, the most prolific of satisfaction and joy of life. There are, however, other beliefs which merit brief mention, as instances of a different type and degree, before begin-

ning a discussion of the general truth or falsity of beliefs,—those namely, which lie at the bases of science. We all, with possibly the rarest of rare exceptions, believe in the indestructibility of matter, the conservation of energy, the laws of gravitation, cause and effect relations, and other equally fundamental and indispensable principles of science, indispensable in the sense that without them there would be and could be no science, for it is just these general principles themselves unproven in any direct sense which afford the basis for building the whole superstructure of generalization and theory, control and prediction, modification and application which constitutes a given science. These beliefs function in the lives of all of us, and only the professional philosopher, in the widest sense of the word, phrases even verbal doubts of their reality and authenticity. They, like the silliest of superstitions, command an "as if" attitude. But to these we will again return, our immediate concern being with what we have called, above, the relative factual reference of beliefs and their consequent value as adjustive devices.[2]

[3]

Delusion and Belief. When we roughly listed a group of beliefs varying from those common to all of us, or all but a negligible fraction whose attitude is dictated by special circumstances, to those special to some individuals, the effect was to contrast beliefs whose holding had much in the way of fact to bolster them up with those that had little. Or, putting this differently, we have some beliefs almost forced on us and which we have to accept, at least in practice, no matter how much we may play with them verbally and philosophically, and some that are in between where there is perhaps as much to say for them as against them, and some at the other extreme, where we believe in the face of contrary evidence or where there is little or no evidence at all. Thus, without taking the examples too seriously at the moment, we might say that the evidence for and against life on Mars is about even; that the evidence for and against telepathy is about even; that the belief for or against immortality is equally well founded. On the other hand, the demonstrable and verifiable evidence against, say, telling fortunes by tea-leaves, cards or the lines in the palm or the position of the stars is stronger than that for it, but many individuals believe firmly and irrevocably in these

[2] See, as above, for Note (1). See, also, Shipley for modern instances of the functioning of belief and counter-belief. See, for current instances in larger setting, Ayres, Ward, Langdon-Davies, Weaver. Confer Chs. I and II of Sumner.

things, either not knowing or ignoring the contrary factual evidence.

There is no question, then, that we can believe in falsities, and that such beliefs are identical with what, in previous discussion, we have called delusions, such delusions running from common and wide-spread instances such as the above to more narrowly personal ones, such as the belief on the part of an individual of ordinary ability and talent, that he is a God incarnated to save the world, or that he is the owner of all the wealth in the world, but that his enemies have taken it away and hidden it and imprisoned him in an institution. We readily recognize the latter as delusions, but still have to account for their existence, meaning by delusions, as should be clear, beliefs that are not founded on fact, are in no sense demonstrable, actually run counter to fact, are in no sense even indirectly or inductively supported, which contradict the whole mass of experience of the individual or group, or which are complete mis-interpretations of that experience.

Thus most of us believe, on the basis of what, in its theoretical and practical aspects, is sufficient and indeed indisputable evidence, that the world we live on is round; but there are two rival beliefs, one that the earth is a hollow sphere and that we live on the inner concave surface with the sun at the center, and the other that the earth is actually flat and does not move at all. It is when one begins to question or observe the holders of such beliefs as the two just mentioned, individuals otherwise subscribing to most of the ordinary beliefs of society and who are, in no sense, pathological personalities (unless the holding of such beliefs, *ipso facto*, makes them such), that one begins to see how such beliefs arise, how they function, and what their value and significance is. In the first place, if and when the personalities are what might be called normal and are lacking in distinct pathological peculiarities, we find that such beliefs are, as is indeed largely true in general, in the service of or correlated with other beliefs. Beliefs, in a word, usually form a system, and while it is true that we may and do sometimes have what amount to unrelated and more or less casual, freely-floating beliefs, the common situation is for them not merely to be correlated but to form some sort of a heirarchy, not technically and logically, but psychologically and pragmatically. And when one has, as it were, traced the relationship of such apparently strange and unfounded beliefs to the upper and more important and more valuable beliefs, in terms of which the individual lives and moves and makes his major adjustments, one finds important belief-general-

izations concerning the nature of the universe in general to often occupy the leading rôle. Since, however, there are other preliminary matters to be considered, we cannot now develop this aspect of belief behavior, but will return to it in later sections, where the hierarchical and related characteristics of belief will be treated in detail.[3]

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Dis-Satisfaction and Compensation. The world in general and the individual's desires, however acquired and whether based on nature or nurture, do not always correspond. We often want more than life offers, or want things other than those that are there for the having. Our drives do not always fit into the scheme of things permissible and possible, and we find ourselves denied the realization of our dearest wishes and hopes, our dearest ideals frustrated and mocked. This is, after all, but a statement of fact, rendered a little more sober in tone than the innumerable expressions paralleling it in literature and religion. To be sure, as we have already remarked, such a state of affairs need not lead to despair, to illusion or to a neurosis; we can, provided of course, we are adequately and properly equipped, use intelligence to guide and direct and consummate our drives and make a pleasant adjustment in spite of the world. Self-control and a complicated technique of consummation are neither defeat nor repression, though the acquisition of such traits is not widely or efficiently taught.

But, often, finding that we and the world are in opposition, finding ourselves possessed, sometimes we know not why or whence, of certain conditionings, certain aims, values and beliefs, we set about satisfying them willy-nilly. If we cannot adjust in terms of these at the moment, we begin to hope we may some day do so; if we cannot achieve what we want now, concretely, we first hope and then act to achieve it symbolically. We begin to believe the world to be, in some hidden and secret sense, what we would really like it to be. We re-create it in terms of longings, unsatisfied drives, unconsummated desires, unfulfilled wishes. We believe, and in terms of belief find the world to be, after all, what we want it to be. We begin within certain rough limits of practicality, sometimes even then stretched too far, to live in terms of verbalizations, interpretations, fantasies, delusions,—beliefs. And these beliefs bear defi-

[3] See particularly, Campbell, Bradby, Oliver, Beers, Hillyer and, in general, as for Note (1); see also the point of view of Vaihinger, Part II, Ch. III, Section D. See also previous references to Adler, Jung, Kempf, Freud, and Hamilton in the sections, above, on the Abnormal Personality.

nite relationship to whatever balked drives we, as individuals, have experienced. We act "as if" we could be and achieve and realize what actually we merely desire. Naturally, far-fetched beliefs do not, ordinarly, function where simpler and more native resources perform sufficiently well to properly adjust the individual. It is in the more complex, the more social, the more difficult aspects of life that such beliefs appear and function. Beliefs function particularly with reference to what might be called the "quality" as opposed to the "quantity" of life,—its mere having. Where reflexes, automatic habits of safety, habits of hygiene and the like make for the establishment and maintenance of physical security, health and mere continuance of existence, beliefs attempt to orientate the individual with reference to something more, something higher, something better which will make life worth the having, once the other things have made the bare having possible. Thus, an individual, well physically, perhaps wealthy, high in the esteem of his fellows, with creative tasks, may yet, because of the death of some one near and dear, find life losing its savor, his work no longer worth while, esteem tiresome and even health a burden. But say that such an individual comes to accept and to live in terms of the belief, based of course on current suggestions, teachings and the like that, after all, the loved one is still to be had and to be seen, and that a so-called medium, for a consideration, can prove all this and grant a momentary glimpse of the dear departed. To believe this is in many cases to once more make life worth while for such an individual, though there are, of course, other beliefs that would function perhaps equally well and certainly with less damage to facts. Such an individual may be hard-headed in other affairs, extraverted to an extreme, cold and calculating and eminently practical, and yet in this one thing, which somehow affects all other things, be quite the reverse. Such a belief evidently has great adjustive powers, great compensatory powers; is, in short, a belief by virtue of which all other things again become valuable.

It is true, of course, that the drives and patterns concerned with the love for the departed are also involved; had there been no such love, there had been no such need for a belief to compensate for the frustration, the abrupt interruption and balking of the drives and their functioning. Had no habits of reaction been formed toward a given hostage to fortune, no compensating beliefs would have been needed. It is immediately apparent from this that the problem emerges, can such habits of adjustment be formed, such conditionings of drives be achieved, such a philosophy and behavior of the individual be outlined, that will make

unnecessary such fictions and compensations as these? Can drives be satisfied, can life be made worth while, can behavior be made satisfying to individual and group alike, without such stretching of reality, such definitely make-believe, "as if" constructs as these? Here the question is merely raised; the many attempts to analyse the conditions of a possible satisfactory solution of the problem will be discussed later. But it should be carefully noted here with reference to the whole subject of beliefs, as we have already pointed out, that while we are a long way from definite knowledge of the details of the involved structures, we are none the less as definitely behavioristic in attitude and approach as in dealing with the items of the nervous system. And it has also been pointed out, several times, that it is just such problems as these, i.e., concrete practical problems of the adjustment of the personality to its environment, physical and social, which are the real care and concern of a psychology which will be more than a mere verbal analysis and a logically consistent, abstract system. The essence of an applied psychology is the ability to predict, control, modify and measure personality traits and personality in general in relation to adequate adjustment, as we have defined it. While, in the present status of knowledge, we perhaps must still concern ourselves with the analysis of separate and theoretically distinguishable traits of the organism, and with what might be called the atoms of behavior, it is clear that ultimately psychology, as the science of human behavior, must concern itself with integration and synthesis and be able to speak in terms of the behavior of the organism as a whole, the personality as such. But, as matters now stand, hardly more can be done than merely to point this out, at appropriate moments and in cogent connections, and to speculate, controlled by the leading ideas of a behavioristic psychology, concerning the possible mechanisms and technique of a larger and more synthetic program. Beliefs, to return to the details of discussion, can be compensatory for any and all balked drives or frustrated modes of behavior, or for any combinations of such frustrations, though commonly they are not easily analyzable in terms of the thwartings which lie behind them. Thus, it is both difficult and complicated to endeavor to say with much assurance, at least apart from a careful, detailed and objective knowledge of all the factors involved, just what compensatory value a given belief has, though there are some instances in which it is clear almost on inspection.[4]

[4] As for Note (3).

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Magnification of the Ego. There is no need, here, to go into the details of all the possible compensatory devices or adjustive beliefs in which individuals or groups are apt to indulge, but there is one large group of such beliefs, in which both the individual and the political or racial unit is apt to find satisfaction and enhancement of life, which is worth some further attention here, reserving such larger subjects as religion and mysticism and philosophy in general for separate and detailed treatment in later chapters. This group of devices might appropriately be called "magnification" beliefs; beliefs, that is, which tend to exalt, magnify and increase the significance, the worth, the power, the rank, the inherited background, the cultural products, and the like, whether of individual or group, or both in relation to one another. A political group, surrounded by numerous enemies and surpassed, perhaps, in actual abilities in some directions, may develop a sense of inferiority and, on this basis, even without being deliberately aware of it, may then develop a belief in an inherent but as yet generally unacknowledged superiority, a god-given message of culture to a barbarous world, a belief in some superiority of blood, of race, of origin, of destiny. This is no infrequent thing in history if read with an eye for the psychological factors back of the more objective matters of war, commerce and expansion.

Similarly, an individual, whether because of physical defects (Adler) or because of real or fancied suppression and coercion, may begin to compensate for the deprivations of existence by the development of beliefs of superiority, not to so great a degree, perhaps, that definite delusions of grandeur sufficient to utterly distort orientation and constitute a definite basis for the diagnosis of paranoia, but sufficient to once more make for self-respect and an ego contemplation that is satisfying, even if a bit contrary to an exact interpretation of the facts and a bit annoying to others. One can, through such delusions and beliefs, compare oneself with those objectively better, overcome what might otherwise be too severe disabilities and handicaps, accomplish what might else have never been attempted. To be sure, here as elsewhere, the line is hard to draw, and there is no question that many individuals in the constructing of such beliefs and delusional systems overstep that imaginary and indefinite line of demarkation between the passibly normal and the frankly abnormal. Also, it is most certainly not here intended to imply that such beliefs are either indispensable or the only technique of accomplishment, nor that such beliefs may not often actually

result in less adequate objective consummation even though they afford the individual a sense of having made a better adjustment. That is, such beliefs may and not infrequently do serve merely as stabilizing aids in the sense that they prevent further and worse deterioration, though they may, at the same time, produce what amounts to stagnation and more or less parisitical mediocrity.[5]

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Pathological Beliefs. As we have said, beliefs can become definitely pathological. In fact, from this point of view, and with no undue dogmatism, we may view the major delusions and the other pathologies of the psychotic, particularly those called "functional," as evidences of the adjustive value of belief in the larger sense, including all types of response patterns though, in these cases, the level and plane of adjustment is different and the attempt successful only in a pathological and more personal sense. For example, taking into account the general and necessary technological attitude or assumption of psychic and physical determinism, we have some three factors entering into a definite case of a given personality disturbance; first, the physical facts of disease or degeneracy and their underlying conditions of infection or drug addiction, plus whatever weight one wishes to give to heredity and possible defective native structure; second, the general total past experience of the individual; third the concrete, definite problems, be they of sex, religion or what not, concerning which the individual's delusions function. And most certainly each of these three, mutually interactive factors, must be given due consideration and no proper interpretation of the significance, the origin or the possible amelioration or cure of any such derangement can be made in terms of one or two to the neglect of the other factors.

Thus, suppose we concretely compare several institutional cases of what is called involutional melancholia or, better still, several cases of paresis, each with definite syphilitic infection and consequent structural degeneration, with impairment of reflexes and motor co-ordination and with pronounced delusions. Each individual will have had, naturally, a different background and general course of experience; each, too, will have met with definite problems, and we cannot, in any sane judgment, attribute the peculiar delusions merely to the physical condition. The delusions will, as in the case of less exaggerated beliefs of the kind we have already discussed, represent the effort of the diseased

[5] As for Note (3).

personality to make life better, magnify the ego, and adjust to the surroundings and conditions of his life. Whatever delusions exist are quite as much the product of experience and adjustment strivings as of the disease condition, and may have existed prior to it or been precipitated by it; they are actually the differential product of the two, and interpretation of them must be impartially in terms of all the factors. While the disease condition, because of its possible or actual impairment of structure, may make for more frequent and more pronounced delusions, the specific character of the delusions cannot be a direct product of these conditions, but only of the experiences of the individual, the wants, deprivations, hopes, ideals, balkings, and repressions. Naturally, in these instances, since intelligence is also impaired, and general orientation and common sense disturbed, the delusions will have even less relation to reality, less coherence and plausibility, less apparent justification than those built up under conditions that are far removed from the disease and disintegration picture we have chosen. But they, too, are "as if" adjustments.

Still further, the delusions of the dementia praecox or the schizophrenic patient, or the more systematized group of delusions of the paranoid personality, show the same functioning of belief though, as remarked above, carried to a far greater extreme, with far less reference to the facts of reality, and with far greater emphasis, as such, on the needs and the purposes, conscious or non-conscious, of the individual. In this sense, the delusions of these or any other types of abnormal personality are, as we have said, simply adjustive devices, making for the realization, in fancy or in symbol, of the thwarted and balked urges and conditionings of the organism. It is always an error, as we have constantly insisted, to separate too profoundly and to make too great a qualitative difference between the behavior trends of the so-called normal and the so-called abnormal, for the distinction is actually not one so much of kind as of degree, of legal rather than psychological meaning, and normal slides with imperceptible gradations into abnormal.

Naturally, as we progress in this whole exposition of the nature and function of belief in human adjustive behavior, and as we begin to consider specific types of beliefs or system of adjustive thought, it will be impossible in each case, to constantly recall in any detail the phenomena of the definitely pathological personality, but it is explicitly intended that such a comparison be constantly made between the belief systems and the belief adjustments that we call normal and those we call abnormal, for

in each of them the same urges and the same trends are at work though, naturally, it is not denied that there is a difference, as regards final results and as regards also, the adaptability of the individuals holding the respective types of belief to the world of experience in general. In a sense, the pathological personality has acquired, because of insufficient experience or insufficient opportunity or perhaps even inefficient endowment, a system of beliefs and patterns of symbolic adjustment which pragmatically will not work but, for all that, the behavior involved is of a piece with the behavior of those who made socially happier choices, though it must not only be granted but even insisted upon that the beliefs of the so-called normal have, very often, just as little factual evidence to support their objective truth.

Between the delusions of grandeur of the paranoic, and the beliefs in the self-importance of what we might call merely an inflated ego, there is little or nothing to choose as regards motivation and meaning; the ideas of persecution which the paranoic "logically" supports with pseudo and twisted evidence have everything in common, except perhaps degree, with the sense of unfairness and injustice of which many a so-called normal mortal too persistently complains, and justifies and proves with detailed but false rationalizations; the claims to religious insight and to the honor of being the bearer of a new supernatural dispensation, whether exhibited on the background of an asylum or in terms of a too-hectic evangelism are, at bottom, the same thing; the hypochondria which leads to claims that some enemy has removed stomach or intestines, while more picturesque, perhaps, than the mere constant claim that the digestion is upset, are often founded on the same mechanisms; the constant and insistent seeing of portentous and momentous significances in trivial events is paralleled by the more common and less degenerated form of undue suspiciousness and the insistent looking for ulterior motives. And, if we recall the section on the other traits of the abnormal personality, particularly as regards peculiarities of perception, memory, thinking and the like, it will be all the more apparent that there is merely a difference in degree and not in quality. The so-called systematization of delusions in the definitely pathological personality is paralleled by what is called rationalization in the more normal individual, each explaining his conduct in terms of verbalizations that, to some extent, probably align and relate them to the individual who exhibits them; but to an outsider, not indoctrinated with the same needs, drives and necessity for such round-about and symbolic and substitute consummation, they seem simply what they are, rationalistic con-

structions which are of no real significance except as such. They do not really explain the conduct in question in terms of facts, but simply in terms of the frustrations, the balkings, and the desires of the individual who uses them. In short, it cannot too often be pointed out, we are not only sisters under the skin, but we use the same tools, sometimes adroitly and permissively, sometimes crudely and with consequent interference, to encompass our needs and desires. Once more it should be pointed out that as between the pathological nonsense of the insane and the often futile strivings of the sane there is little to choose from the point of view of demonstrable truth; the distinction lies in the fact that what we allow to be called normal is that which, whatever its objective justification, whether it be great or small, has at least a livability, a social value, in that a society could conceivably be formed to terms of such beliefs. To be sure, and this is the argument of the concluding chapters, even to grant this is emphatically not to also grant that no better beliefs or systems of adaptive thought could be found; in fact, it will be definitely argued that much better adaptive systems of belief and thought can be found, which will be based to a far greater degree on demonstrable fact and decent inductions in terms of that fact, and that society and the individual will alike prosper when and if such systems are elaborated, definitely taught, and actually lived out in experience. But to this we will return.[6]

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Man and Nature. The whole drama of life is in terms of Man and Nature; the reciprocal play and inter-play of the organism and its habitat furnish all the tragedy and all the comedy of life. To be sure, we do tend, some of us, to add yet a third element, the supernatural; but this is something of a special story which we will examine later in proper detail. And even then, the supernatural is but an agent which, at times and in places, and for chosen individuals, enters into the Man and Nature situation and transforms the odds to favor the former. History is one record of the interaction between the two, Man and Nature, with its story of the development of culture and civilization; myth and saga and folk-tale another aspect of the same tale; and in the individual, the beliefs held and their relationship to self and to

[6] See references in previous sections on the abnormal personality, particularly with reference to delusions and disturbances of functions in general. See also, in this connection, Stekel, Weaver, Bradby, Campbell, Summer, emphasizing the point of view shown in the recent reference to Vaihinger. See also, Medieval examples of general belief in Steel and compare modern tendencies in Shipley, Ayres, Ward, Langdon-Davies, and the three biographies listed,—Beers, Oliver and Hillyer.

environment, their efforts at making the one stronger and the other more amenable, tell the same story.

The ignorance of the individual and the weakness of both individual and group are alike responsible for the creation of beliefs and conduct in terms of them; beliefs, as we have said, are instruments of adjustment. To be sure, they are not always and everywhere the best possible instruments, but whether better or worse, they are of course, determined on the basis of all the factors entering in, and in no sense freely created. The weak individual or the weak group, with evident actual defects, living in terms of a belief in superior innate endowments, blaming imagined unjust circumstances and the effect of bad luck, with parallel criticism of others as too materialistic, as just favored by circumstances, is a picture that we meet with everywhere, ranging from the merely mistaken, to the actually detrimental, to the openly pathological. The question is what can be done other than to merely understand this situation and this trait? Is there, in any sense, a possibility of creating individually and socially, such beliefs as will bring forth the best abilities of individual and group and most dynamically encourage them, which will lead to better and better adjustment and the constant possibility of still better? There is no question that an attitude of hope, faith, belief, joy and anticipation of the good is, on the whole, better than one of bitter resignation, unwilling subjection, sadness and sorrow; better psychologically, better physiologically. The effects of beliefs are due to just this biological push which the delusions and the false but alluring attitudes give, so that one may say, as we have in effect already put it, that delusions are real to the extent that they function in every-day life, ac as stimuli, can be taught, operate to arouse and stir the individual and may, for all their falsity, either raise the individual from the situation which is unpleasant or so adjust him to it that he will find there what, in actual fact, is missing. In matters of physical injury or disease, to take a concrete instance, an attitude of expectation as regards recovery, while it will not swing the balance toward health and safety if the odds are too great against the individual and the actual disease is too strongly intrenched in the organism, will none the less in other and minor disease conditions be a factor which makes for quick recovery, the neglect of irritations and the summoning of the resources of the organism. There are limits both ways; beliefs will not move mountains, but they will stimulate ductless glands; or rather, attitudes which, because of the patterns of conditioning and previous experience, are provocative of parallel and simultaneous adequate ductless gland activ-

ity, make for health; others make for disease. Body and mind, as we have seen, are in no sense separate and interacting entities; but what we call, by way of emphasis, mental behavior, and what we oppose to it as physical do, through the conditioning of experience, affect one another. Beliefs have biological as well as verbal and hortatory value. But to these general statements and theories we will return in the following chapters of this part of the book, where separate and significant examples of belief and attitude, in a major sense, will be considered.[7]

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Summary-Prospectus. In summary, however, it will be best to once more indicate the point of view involved, restating, as it were, the main points of the general thesis of this book. In the first place, all human behavior is the result of the activity of definite, though often unknown structure. This is a necessary fundamental technological assumption, else we find, as in the past, the introduction of all sorts of entities and pseudo-entities that have no physical or structural reference and hence cannot, in any way, be calculated upon. Secondly, we have assumed a definite determinism, a determinism alike for so-called physical and so-called mental behavior, though showing later that the distinction between these two is a matter merely of pragmatic convenience and must not be in terms of a sharp and distinct separation, but merely a matter of emphasis.

On the basis of all this we have analyzed the nature of inheritance and environment, again showing their purely theoretical separability and finding that the problem of accounting for human behavior lies in a more careful analysis of what human beings are capable of apart from experience and training, and what they learn to do in terms of experience on the basis of these inherited abilities. Again, a careful distinction was drawn between what was called drive and what was called mechanism, with a strict insistence that drives are primary and that intelligence, as a mechanism, is secondary. But, in connection with all this, it was also pointed out that in many ways and for many reasons, what we call the psychological analysis of human behavior, since it proceeds in terms of man-made logic and the assumed value of a given set of categories, is apt to be destructive of the relationship of facts as life presents them, and that no mere atomistic analysis of human behavior in terms of the concepts we have just mentioned can be sufficient. Human be-

[7] See, particularly, Boaz, Murphy, Levy-Bruhl, and Sumner for the material of the so-called opposition of Man and Nature. Shipley, Ayres and Ward give, again, the modern emphasis.

havior is always and everywhere the behavior of the whole organism, of the personality as a whole, and such a personality always has what we may call, without disturbing the sense of what has already been assumed, a purpose; is always striving, is always endeavoring to consummate something. In our discussion of personality we showed how various situations and factors produced various alterations of personality, some normal, some pathological, and that only an effort to take the behavior of the personality as a whole as a topic of discourse, or discussion, or investigation would enable us to build up an adequate psychology as the science of human personality, its origins, its growth, its problems and its methods of solving them. We then, in this chapter, outlined the fundamentals, without detail, of what might be called a psychology of belief; for it is apparent that much human conduct takes place, on the basis of drives and with the aid of mechanisms, in terms of belief, expectation, probability, plan and purpose. Intelligence is a tool, but in no sense a perfect or an infallible one, and it often, when it cannot overtly accomplish, constructs symbolic or substitute possibilities of accomplishment,—what we have called beliefs. And these beliefs then constitute platforms of concerted and organized personality behavior and adjustment.

Beliefs, as we have shown, may be in terms of particular thwartings and deprivations, or they may be, as will be shown in the next chapter, of much more general nature and may come to be, in many cases, of such wide spread efficacy and reference that they constitute as a system of beliefs, a whole attitude toward life. A general belief of this sort, or a complicated hierarchy of them, may direct all the behavior of a human being in all matters of life and experience, and thus constitute an infallible touchstone for all decisions, all behavior, all expression or repression. And when an individual is acting, as a personality, in terms of some such belief, it is not only inadequate to try to understand his conduct in terms of lesser units, whatever ones we choose, but it is also misleading. A man may not be attempting to reduce his weight; he may be attempting to earn spiritual glory. He may not dislike sex, but he may believe that sex is interfering with salvation. A woman may not be regardless of personal appearance, but she may grudge the time taken from more serious matters. The study of behavior atoms leads us nowhere in the search for an adequate understanding of human nature.

But religion is not the only generalized world-attitude. For the philosopher, too, experience is organized in terms of certain

general beliefs and attitudes and so, too, for the artist and the scientist. In short, there are several general, conflicting, though partially overlapping general ways of organizing behavior, generalized beliefs which tend to control the type and the relative activity of drives and their expression. It is not for a moment implied that even the most fervent believer never acts but in terms of his beliefs; the religious may back-slide, the artist become less attentive to beauty, the philosopher show momentary spasms of less logical behavior, and the scientist forget the usual rigidity of his thinking. Indeed, it is probably more true to say that such generalized beliefs tend rather than succeed in becoming a universal guide to behavior,—that they all have their special fields of control, and that they all neglect to take care of some forms and acts of behavior. But, as compared with casual superstitions and limited delusions, these general, systematized beliefs do control a wide field of behavior and, as such, are well worth study. For each of them does what nothing else will do, namely, makes experience, as a whole, have a meaning and behavior,—a consistent and worthy purpose. To be sure, as will be clear when we come to consider these types of world-belief in detail, no one of them, as it is at present constituted, is perfect; no one of them is really adequate to govern all behavior; no one of them is so well supported by verifiable fact and so flexible in its application to varying needs, that it is, *ipso facto*, acceptable to the average human being. There is greater diversity than agreement, even within the realm of some particular belief. But this is perhaps inevitable in the present state of knowledge of the world of Nature and the world of Man; there may come a time, when knowledge is greater, and yet not so great that there is no room or need for beliefs, when we will be able to frame a more inclusive, a more satisfying, a more justifiable belief or hierarchy of beliefs. But that time has not yet come.[8]

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[8] See Russell, Ward, Day, Needham and, particularly, for a general philosophical summary and inclusive presentation of a skeptical point of view, Santayana. See, also, references in the following chapter on religion and the beliefs in connection therewith and confer, for general background, Balfour, Jastrow, Russell, and as for Notes (1) and (2). See also references in Part II, Ch. I, on emergent evolution.

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CHAPTER II

MAGIC, MYSTICISM AND RELIGION

1. Magic and Religion Contrasted. 2. Their Origins and Separations. 3. Survivals and Contemporary Mixtures. 4. The Psychology of Conversion. 5. The Pathology of Religion. 6. The Future of Religion. Bibliography.

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Magic and Religion. There are several major beliefs or belief systems which we shall consider separately: religion, the art-literature compensation attitude, and the science-philosophy formulation. While each is distinctly different and each has special and peculiar characteristics, each also resembles the others, so that our treatment of the first two types will be somewhat shorter than that of the so-called philosophical, in that philosophy, as we shall see, represents on a larger and less special scale what religion and the art-literature attitudes represent, and accomplishes in a less narrow setting, what the others also accomplish. Each is a system of attitudes and beliefs in terms of which behavior is adjusted and drives consummated.

Here as elsewhere, definitions are both necessary and yet difficult; to define religion too narrowly will leave out many attitudes that, from our present point of view are distinctly religious; to define it too broadly, will be to lose the special significance of the behavior that is distinctive. Also, depending on the particular investigation, the definition will vary in phraseology and emphasis. Thus, one may approach religion from a comparative, analytical and logical point of view, viewing it as a species of philosophy; or from a genetic, historical, anthropological point of view, seeing it as a type of behavior and institution; or thirdly, from a pathological, psychological behavioristic point of view, stressing the behavioristic-individualistic, adjustive aspect. Naturally, all these overlap, and while we shall be primarily concerned with the last aspect, we cannot ignore the others. And taking all this into account, as well as the many varieties of behavior properly called religious, we will define religion as a type of more or less complex belief behavior, partly cognitive, partly emotional, partly motor, toward a realm of things, occurrences, sometimes Beings, that are, in modern and more sophisticated terminology wont to be called "supernatural" but which, to the primitive who cannot make such a highly abstract distinction, are

simply utterly and completely mysterious and incomprehensible as compared with other aspects of life, are beyond ordinary influence, prediction, understanding or manipulation; which behavior is believed to have adjustive value; in short, religion is a complex "as if" adjustment with the reference indicated, ignoring many facts, mis-interpreting others, and leading to consummation of drives in terms of symbolism instead of in terms of objective facts.

We must clearly understand in this connection that the objective and analytical attitude of the investigator is not that, necessarily, of the practitioner; the student of religion is not necessarily religious and the religious believer need not be a student of the significance, the origin and the development of his belief and attitude. This applies equally, of course, to all we have said in the introductory chapter on delusion and belief in general; one does not need to understand the psychology involved in order to form a given belief, and even understanding it one does not necessarily have to adopt, change or discard a given attitude. Still further, to go into more detail concerning a matter merely mentioned previously, the verbal aspect of a belief or the emotional attitude are each separable from the overt conduct involved in a given religious ceremony. Thus, an individual may enter a church, may go through whatever acts and verbalizations are necessary for the actual devout worshipper and believer to perform and yet, in a proper sense, not be religious, for the essence of a belief, whether religious or otherwise, is not just the overt conduct, but the overt conduct plus and in connection with definite attitudes, patterns of emotional valuations and the like, i.e., purposive behavior on the "as if" basis whether consciously realized, i.e., verbalized, or not. The believer attaches an adjustive value or meaning to the acts which he performs in accord with personal or social custom; he expects results from them; they have adjustive value and significance in the realm to which they belong. The behavior of a non-religious individual who believes he will receive mundane social credit for a pious pilgrimage exhibits not a religious but a social "as if" attitude. The same overt conduct may, of course, function in many very different belief situations.

One may perform conventional religious acts and be non- or even anti-religious in belief; one may omit the usual conventional acts of religion and be, in belief and attitude, extremely religious. Thus, to repeat, a religious act is an act which, with its cognitive, its affective, its behavioristic and its valuational aspects, is intended to definitely accomplish something for the doer, something in connection with the behavior in question plus the unknown,

the mysterious, that which is beyond comprehension and control, which is not even necessarily clearly seen in terms of such words as we have just used. Religious behavior is behavior in terms of things, situations, qualities, what not, for which there is no other reaction than what we have called belief; it is an acting in terms of "as if," as in the other simpler situations we have discussed. Such religious or belief behavior may precede any definite verbal framing or distinct awareness of what is involved, though this decidedly does not, in any sense, imply that religious behavior is instinctive, for it is not; on the contrary, it is definitely learned, either through personal experience or on the basis of the example and concrete teachings of the group. When the personal aspect predominates, we get individual religiosity and mysticism; the social aspects, when dominant, produce a more institutionalized behavior, but all religious behavior, of course, has both the personal and the social aspects. Indeed, it is partly because religion offers one of the examples of a wide-spread belief, geographically and historically speaking, that it is so interesting. Apart from this more or less completely universal aspect of religion, plus perhaps a certain congruity of definite elements of belief and attitude, it differs not at all from the other beliefs, normal or pathological, which we have discussed, being equally a product of the reaction of heredity and environment, a device to enhance experience and make for better adjustment, a systematic platform for the consummation of purposes and needs. But where the beliefs of lesser complexity and lower level, which we have already discussed, refer to minor situations, personal problems and more or less momentary balkings, though such beliefs may persist, the religious belief is with reference to a larger problem, the problem of life as a whole, the universe as such, and has therefore much that is common in the instances of individuals who thus react. Naturally, we do not mean, as indeed we have already pointed out, that the elements here analyzed out are necessarily conscious elements in a religious belief, whether in its formulation or in its use. Theology comes after, not before religion and may be as disintegrative in fact as it plans to be integrative in theory. Furthermore, religious beliefs are, as we shall see, wrapt up with other and apparently unrelated beliefs; in a sense, a religious belief is sometimes the crowning belief of a whole collection of minor beliefs which would, else, be more or less unrelated and inconsequential but which come to form a more or less unified attitude toward life and experience when gathered together under the unifying and reconciling religious heading.

If we wish to distinguish magic and religion, we will find it

difficult to do so. On the whole we will find the following emphases more distinctive than any categorical and dogmatic definition which endeavors to separate them completely; magic tends to be compulsory, where religion is propitiatory; magic tends to regard affairs as mechanical, religion as permeated with life; magic is more personal, less institutionalized, less moral and social. But magic, equally with religion, is a belief or attitude or collection or hierarchy of such which has adjustive value and which is the product of ignorance and mystery and perplexity. In primitive cultures, whether ancient or contemporary, it is difficult if not impossible to clearly separate these two tendencies, the magical and religious; rather one finds a complex from which, as time goes on and culture becomes more complex and knowledge grows, there develop by separation what may be specifically seen as the two emphases we have discussed, though in all cultures, even in the modern, one finds again the mixing of the two different elements or emphases.[1]

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Origins and Separation. It will pay us, however, to see something more of what might be called the origins, in a psychological rather than an historical sense, of religion and magic in a primitive setting, both in order to more clearly understand the adjustive value of these beliefs and also to get a background for the understanding of the more personal experience of religious conversion in the individual. Stating the position in general terms, we find that with growing awareness of aspects of the environment which cannot apparently be controlled and for which there is no adequate natural reactive tendency except in terms of mere emotion, all sorts of conditions become established. What can be reacted to "as if" vital and in terms of personal and introspective experience tends to become animated and anthropomorphized; dreams, visions, trances, illusions, drug and fatigue experiences, all contribute to a picture of the universe which reason, in the earlier and cruder stages of the development of language, cannot solve or sort out and to which it can suggest no proper, circumstantial and verifiable means of response.

One aspect of the universe seems "as if" it were punitive, another "as if" it were kind and generous; to the one the religious personality acts as it acts toward other terrifying and threat-

[1] For definitions of religion see Pratt, Chs. I and II; King, Chs. I and II; James, Lectures I to III; Leuba, *Psychological Study,* introductory chapters, *Belief in God and Immortality,* introductory chapters; and in general, Perry, Kallen, Carpenter, Robertson, Rivers, Connybeare, Schleiter, Flower.

ening things and people, to the other with the same reactions used in other similar situations. Perhaps even the phrase "aspects" of the universe is too sophisticated, too modern, involving too much present day ability to analyze and to abstract. One can have, in the sense we are describing it, a religious attitude toward any given object, where the conditions of knowledge and experience, and the inadequacy of possible response are present as outlined. When neither an adjustment in terms of experience, understanding and control, nor yet one in terms of mere emotion is possible, the individual tends to shift into a quasi-mental, quasi-emotional attitude that seeks to understand, control and use the object in terms of the nearest and best fitting past experience, to treat it "as if" it were thus and so and could do thus and so, and such is the essence of the crude beginnings of the religious attitude; in a word, beliefs suitable to the purposes, the adjustments, the problems and the hopes and wishes of the personality. The old saying of the Romans that it was fear which first brought Gods (religion) into the world is an illustration of just this situation; religious beliefs differ not so much in their initial nature or formation as with reference to the broader field of their application, their greater universality, their greater likelihood of development in normal and usual situations, their greater applicability to the problems of life in its larger sense. Religion, like other general beliefs, even frankly pathological instances, can come to be a general attitude of life and govern and color all experience and, again like other beliefs or systems of beliefs, religion still finds a field of experience that science does not clearly explain and for which science does not offer concrete, mundane techniques for controlling.

That is, however antagonistic we may emotionally be, if we still remain on a frankly human and objectively determined plane of appreciation of experience, we cannot be dogmatically negative in religious beliefs; agnosticism, plus objectively based judgments of probability, is the best that objective thought can do with the problems of religion in the best and widest sense. To dogmatically deny the claims of religious belief, as we would those of the paranoic or the peretic, is to simply have a rival theory of the universe which is as little demonstrable as the positive one, and is hence, in a proper sense, to be still religious in attitude, for both theism and atheism are alike beliefs concerning the nature of that which is, to the believer, actually unknown so far as definite and conclusive evidence goes. Here we meet again with the possible different responses to a situation; one may be puzzled, balked, become neurotic; one may be equally puzzled and balked,

and become a believer in that which satisfies the sense of justice and fitness, and which guarantees, in terms of belief, that the personality will one day be and have what is assumed to be proper; or one may be puzzled, face the problem, experiment, think, and neither believe nor yet so yield to the difficulty as to become neurotic or unbalanced. But this calm, balanced attitude, knowing what is demonstrable, thinking about what is not yet demonstrated, acting in terms of practical necessities but always reserving the right and the ability to reconsider, this is simply the scientific attitude applied to the ordinary affairs of experience. One must always believe something, but the limits are set by the personality, its needs and past experiences, quite as much as by the obtainable evidence.

Religious and magical beliefs arise, then, in the course of experience as such, before that time when more exact knowledge and a better understanding of human nature make it possible to simply withhold judgment concerning certain matters and certain situations for which, as human beings are constituted and as current knowledge goes, there is as yet no objective, demonstrable and verifiable answer, but only an emotional or a belief attitude, or a complete neurotic balking, or else a scientific suspension of judgment as regards some things. Religious and magical beliefs, like beliefs in general, are part of the technique of living, are often valuable, practical and useful devices for adjustment though, like other beliefs they may, through overstressing, become an actual detriment to the individual. Whatever value beliefs have, they should not, under penalty of warping the individual and leading to pathological behavior, ignore facts and exact knowledge as they come to light. While beliefs concerning a given experience may be valuable in a position of ignorance concerning it, once actual and accurate knowledge is obtainable, the "as if" belief becomes a handicap. In short, beliefs to be at their best should always be in terms of and based on whatever knowledge exists, and be continuously revised in terms of the growth of that knowledge. Beliefs will perhaps always be necessary, but what beliefs and with reference to what things, we shall discuss in more detail later.[2]

[3]

Survivals and Mixtures. In our discussion of the relative emphases of magic and religion as forms of belief, we stated that,

[2] See as above for Note (1) and also Murphy, Bradby, Kellett, Spence, and references on belief in general as in preceding chapter.

as culture grows, they tend at least in intention, to become separated, and emphasized as differing but related belief systems. Yet, for all this possible theoretical separation, they often remain well confused and intermingled in practice and in the individual's system of beliefs. As religion develops, though we cannot here trace the points and lines of change and crystallization, belief comes to be centered on a God or Gods who are definitely supernatural,—whatever affiliations they may also have with human ancestors,—and on another and supernatural world, where the Gods live and move and have their being, and on a supernaturally derived and revealed system of living, an imported and adopted code of morals which is pleasing to the God or Gods, and on a whole technique of ritual and service which is the basis of communication with the supernatural world and its inhabitants and the medium of consummation of adjustments of a religious nature. This supernatural world is the world of fulfilled desire, the world where the balkings, the trials and tribulations, the sorrows and the sins are no more, and where life is as the personality would have it; it is a veritable picture of what life would be, if all were well. To attain to this, the believer adjusts his life in terms of belief and conduct which is partly religious, partly magical, ignoring facts which seem to contradict his belief and behavior founded upon it, or twisting facts to suit it, just as does the believer in domains that are not specifically religious. The ego finds exaltation, a sense of power; desires are gratified, if not here and now, then surely there and then; in short, the believer acts as if the desired life is but momentarily postponed. He endeavors to propitiate the powers that be; sometimes becoming more imbued with magic, he even threatens them; he prays, he makes sacrifices, he uses charms, he indulges in pious formula that are both religious and magical, all in the interests of immediate and ultimate better adjustment, but all in terms of belief rather than knowledge. Modern religions, except perhaps the most sophisticated and simplified, still deal in magic, although it is far from acknowledged. The religious devotee has his fetishes, his compelling ritual, his personal behavior and techniques interwoven, skillfully or crudely, with the more specifically religious aspects of the whole pattern of his belief behavior.[3]

[3] See, as for Notes (1) and (2) and also Davenport, Kallen, McCabe, Sellers, and Ellwood; for psychoanalytic treatment, with social emphasis, see Martin; for the conflict of belief and knowledge, see White, particularly the chapters on the social sciences; for treatment of sex affiliations, see Martin, James, particularly Lecture I and Cohen, throughout; see Rivers for broad survey; also Connybeare.

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Conversion. We have already remarked that inasmuch as this is not a specific treatise on religion in all its aspects, we must necessarily be summary and abstract in our attitude, enough being discussed simply to show the functioning of specifically religious belief in the adjustment of the personality, normal or abnormal, to his world of experience. In the psychology of religion and in religious literature, the writings on conversion are detailed and numerous. Here we can simply restate our general point of view as regards the energizing and freeing aspects of belief in general, with somewhat more emphasis on that aspect of religion which is prone to quite definitely promise, in return for specified conduct, the fruition of such ambitions and such desires as are proper to the religion in question though, naturally, individual believers will interpret and transform such qualifications.

Conversion, in this instance, is like all conversions, whether to specifically religious or non-religious beliefs. Conversion is a process, not at all as sudden as much of the literature and current understanding would have it, whereby one set of values and one set of beliefs are exchanged for another that promises, actually or apparently, to do more for the individual than the discarded one has done, to offer more security, more freedom, more ego enhancement. Naturally, too, there is an element of the insufficiency of the past as well as the sufficiency of the future system of beliefs in the process; one does not discard a form of living and a set of beliefs if they prove adequate to the adjustment of the personality. Conversion is, as we have said, usually a lengthy process with much sliding back and forth from one formulation of beliefs to another, a process of reconditioning drives together with efforts at blocking or repressing activity in terms of the old conditionings, a process of finding outlets in new directions, new objects for emotional discharge, new ideals, new purposes, but all, of course, in terms of the same old drives as sufficed to motivate the old and now non-preferred behavior.

Since this is so, and there is certainly no element of the mysterious or the supernatural (in the language of religion) in the matter, it is easy to see why conversions are so frequently failures, so frequently followed by behavior in terms of the old and even more emphatically so. The starvation of the old satisfactions, followed by or paralleled with lack of adequate satisfaction in terms of the new behavior make emphatically for a return to well-established habits and satisfactions. Conversions may take place, as has been indicated, in specifically religious or quite non-

religious worlds; thus, an individual may be converted from adherence to and love of a given individual to another; from believing in the worth, the inspirational value and the leadership ability of one group to those of another; from the flattery, the adulation, the affection of one situation to another; and yet ultimately return to the first upon finding the second not up to expectation. The process of shifting, called more deferentially conversion, may be in the realm of the political, the musical, the literary, the world of love, foods, diet, the great or the small; it is essentially everywhere the same, namely, an effort, in terms of a shift of beliefs and of values, to get more and better returns than the old beliefs and values offered or made possible. Conversion, in a certain sense, though not necessarily always a deliberate act, is a process of experimentation, a tentative effort at re-adjustment due to both the felt or suspected inadequacies of the older ways of belief and adjustment and the fancied superiorities of the newer ways. We become converted to the theory of evolution, to the atomic theory, to idealism or the new realism, to jazz, to a new form of marriage, to a new solution of social problems, in much the same way as we become converted to a new theory of salvation. Life, as we have pointed out, is never completely, and seldom even extensively, in terms of such knowledge that we can call the element of belief non-existent or of negligible dimensions; when all is said and done, human beings live in terms of probabilities and expectations, and simply for this reason is there the constant shifting we have been discussing. Were there absolute certainty, there would be no need for this shifting and experimentation and belief would be reduced to a vanishing minimum.[4]

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Pathology of Religion. Naturally, as we have already remarked, religious beliefs, like all others, can and often do go to extremes that are frankly pathological. Religious beliefs, like many others, can be so all-inclusive in their field of reference that they can themselves act as thwarting devices even though their original office was to adjust and to overcome thwarting. If and when religious beliefs, as platforms of values and systems of conditionings, lead to conduct that is detrimental to the real welfare of the organism, when fancied values in terms of beliefs conflict with demonstrable values in terms of fact, we are justified in calling the behavior in terms of such beliefs, pathological. If

[4] See, for conversion, James, Leuba, King, Sellers, and Ellwood; see, also references on belief in general as in preceding chapter, and for religion and belief, see Kallen, Chs. IV and V especially, but also throughout.

religious beliefs lead to the deliberate neglect of health, to the degeneracy of the body as an organism, to undue fasting, to self-inflicted tortures, to isolation and hermitage, to sex perversion and abnormalities, such beliefs are pathological in a justifiable sense of the word, even though all we have to oppose to such beliefs are contrary beliefs with a different set of values.

Primitive religion, either in the chronological or culture level sense of primitive, is prone to lead to such excesses and abnormalities, and many contemporary religious gatherings, and not only in back-woods settings, are so full of abnormalities of emotional expression, visions and illusions, sexual excitement and overt cruelty to self and others that, for all their religious nature, and they are definitely religious, they are also so pathological that were an individual to persevere in such conduct or so behave apart from the specific group, he would soon be diagnosed as detrimental to the community. The biographies of many of the leading figures in the history of any religion exhibit pathological and abnormal traits in great profusion, and one can hardly conceive of a well-adjusted, normal, extraverted, and organically sound individual in this day and age, becoming the advocate of a specifically new supernatural revelation and religious doctrine.[5]

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The Future of Religion. We have already, in the close of the last chapter, called attention to the fact that religion, however broadly or narrowly we define it, is but one of several possible ways of regarding life as a whole, and the relations of Man to the Universe. While our definition of religion at the beginning of this chapter was so broad that, in a sense, it is theoretically possible to include within its limits the believer in certain philosophies of life that have no actual supernaturalism or other-worldliness, it is unlikely that any confusion will result. The idealistic philosopher, with his belief in the Absolute, the scientist who believes in Matter in Motion, while they are all, in the widest sense of our definition, attending to and behaving toward things and situations not clearly and completely apprehended by sense and reason, and are all dealing with life in terms of far-reaching and deep-reaching beliefs, it is still clear that in the case of the essentially religious individual, the emphasis is on faith in terms of needs, whereas, in the case of the others,

[5] See James, particularly Lectures V to VIII and XI to XVII; also Martin, in general; Cohen, Davenport, Ellworthy, McCabe, Flower, and the references to the pathological in the last chapter.

the emphasis is on conclusions in terms of what objective facts can be actually mustered in terms of what the facts are, not what they ought to be or should be to suit the believer and his frustrated personality. The scientist and scientific philosopher, in essentially scientific or overtly referred philosophical research, look first for what actually is and then, when the weight of apparent evidence is forthcoming, believe till such time as new evidence contradicts the old and a new belief is necessary. The religious personality, on the contrary, is not so prone to search impersonally for facts on which to build a properly orientated belief, but rather seeks merely sufficient apparent evidence to bolster up a belief that will, as a technological device of living, administer to the welfare of the individual and enable him to adjust to the vicissitudes of fortune.

But these are, necessarily, emphases, and it is both unwise and impractical to be dogmatic about final and complete distinctions. In so far as the emphasis, whether in philosophy or in religion, even, is on facts that are demonstrable, verifiable and widely observable, and on cogent conclusions in exact relationship to them, the result is science. We could, conceivably and theoretically, have a science even of God, and attempts, historically, are not lacking to construct such a body of knowledge, but it would not then be religion in the belief or "as if" sense at all, but simply what it has just been stated to be,—knowledge; and, as such, knowledge, involving that minimum of metaphysical belief which is perhaps involved in all knowledge, would be reacted to as are all facts and demonstrable situations. On the other hand, in so far as philosophy or even any so-called science is in terms of needs, hopes, personal problematic situations, patterns of adjustment and thwarted and balked drives, and is thus a basis of obtaining what the strictly factual state of affairs makes impossible, then such constructs are essentially religious and constitute religion. If a philosopher's conclusions are merely and essentially speculative, he is merely indulging in belief; if they are efforts, in terms of facts, to extract a larger but objectively justifiable and referable meaning, he is a scientist. But these two aspects of philosophy, as speculation and therefore as religion, or as realism and therefore as science, will concern us in detail in a later chapter.

A candid philosopher speculates on the wonders of man's intellect and the profundities of his ignorance, and is forthwith called "religious"; an equally candid scientist marvels at the beauties and immensities of the universe and the tremendous

span of time it has developed in, and forthwith, again, is uncritically called "religious"; the biologist speaks with hesitation and commendable doubt of the possibility of creating life, and is immediately quoted as an example of a religious scientist. All this is nonsense, in so far as these conclusions or attitudes are based, objectively, on what facts are found, and the facts are not selected in terms of desire, but in terms of non-personal research and experiment. Religion, as a system of beliefs, emphasizes human needs; science and philosophy, while not ignoring human needs, are formed in terms of fact so far as it is ascertainable. To be sure, as we have said, there are philosophies and philosophies, and some of them are deservedly called religions or philosophies of religion, in that, though labeled philosophies and having no open affiliation with any current religion, they seek more to placate human nature than to draw it a map of the universe as it is.

Certainly religion has a future even as it has a past, and probably a long and prosperous future, for the time is not yet come when the majority of human beings will be able to adjust in terms of facts, seek only for those values which are obtainable here and now, and cease to look for adjustment in terms of beliefs which, because of their non-relation to any but the haziest of superficial analyses of fact situations, are properly called delusions. Religion will, in all probability, continue to change as it has been changing; come to look more and more to facts and less and less to gratification in terms of fantasy and if, running parallel to this, science and philosophy can build up a point of view that is adequate for the adjustment of the human being, religion will gradually cease to be a means to an end that can better be accomplished in other and more factual ways.[6]

In short, the present situation shows, as previous cultural and historical situations have also shown, a conflict between rival points of view and rival systems of personality orientation and adjustment. We might summarize the possibilities or variations thus; there are various systems of orientation, involving varying degrees and kinds of satisfaction, varying degrees of factual reference, degrees of appeal as contrasted with authority, of ease of acquisition as contrasted with difficulty, of natural as

[6] See, particularly, Kallen, Chs. XI to XIV, and the final chapter in Martin, James, King. See, also, the scientific objectivity in Fagnani, McConnell, Robertson, Gunkel, and White. See, as previously, Santayana for point of view of objective, psychological skepticism, and for detailed treatment of religion as it was, and as it may be in the future, see Lake, Sellars, and Ellwood, throughout.

contrasted with supernatural reference, of factual as contrasted with symbolic consummation, of biological as contrasted with speculative foundation, a minimum as contrasted with a maximum of belief and "as if" attitudes. An individual comes to adjust in terms of that particular system of orientation which his nature and nurture adopts on the lines of least resistance, that is, on a deterministic basis of heredity and environment, of opportunity, teaching and results. As matters now stand, in terms of what we now know concerning the needs, in detail and in large, of human beings, and allowing for individual differences and the factors of the environment, it becomes not merely a theoretical but an immensely practical question as to what system of adjustment, involving what beliefs or what degree of belief is best alike for individual and for the group, and will best allow for the maximum attainment, on the part of both and will produce, as a by-product (which in turn will be an additional factor of reference) the best all-round culture.

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CHAPTER III

THE NATURE AND FUNCTION OF ART AND BEAUTY

1. The Good, the True and the Beautiful. 2. Various Theories of Beauty. 3. The Social Nature of Art. 4. Symbolic Desire and Achievement. 5. The Creator and the Consumer. 6. The Function of Literature. 7. Summary. Bibliography.

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The Good, the True and the Beautiful. This phrase from the Greek philosophers, one which has been repeated with varying interpretations ever since, calls attention to the point we have already discussed, namely, that there are various values, various systems of evaluating experience, classifying it, separating and distinguishing it. To be sure, not only the poet, but even the philosophers have, at times, endeavored to rub out whatever slight distinctions it seems possible to make between what is meant by each of these words; truth has been called beautiful and the supreme good; the beautiful has been called the final truth; the good has been called both true and beautiful. But poets and system-makers aside, there is a definite sense and a common sense in which these words may be relatively and properly distinguished.

Certainly, however, and for all the conflicting philosophical effects to rigorously define or identify these words and what they stand for in experience, one thing is clear; they are all, in a proper sense, psychological terms. However we may care to define these words in an absolutistic sense, whatever they may be "in themselves," they mean something with reference to human experience, and while they certainly have their interrelations, they also have their specific differences. The "goodness" of a specific mortal girl is not also her "beauty"; she may be both or either or neither. It is also true she is a certain age, a certain size, but the truth of these judgments has no necessary relation to her beauty or her goodness. They each involve distinct perceptions or judgments or reactions,—call them what you will,—for we are not here concerned with the metaphysical or epistemological or logical aspect of the situation,—but the psychological.

Still further, there is another aspect of individuality in all these matters; what one calls true another does not; what one holds to be good, in any sense of that word, another may hold

to be bad; and it is an adage that taste cannot be disputed, and that beauty is somehow a matter of an individual's own concern. What is beautiful to one, may be negligible or even ugly to another; what one sees as commonplace or ugly, another goes into raptures over. Is it then possible, amid all this confusion, to even consider the psychology of so elusive and so individual a matter of experience as beauty and the beautiful? There are two approaches which will answer this question from the general point of view of this book and from the point of view, in particular, of the general treatment of belief and adjustive compensation. In the first place, there are certain general theories of the beautiful which we will consider, and which offer an understanding of the nature of beauty as a type of stimulus or situation in general; and, secondly, as will be seen, there is a functioning of beauty which it will be possible to examine from the point of view of a belief, of an attitude, leading from this to a consideration of art as a larger but related type of experience. It will be best, then, to first consider various theories of the nature of the beautiful as a general type of experience in which all share, though the specific objects that are called beautiful will, of course, vary from time to time, place to place, culture to culture and even individual to individual.

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Theories of Beauty. Theories of the nature of the beautiful, of which there are many, as developed by psychologists and philosophers on the bases of speculation or experiment, may be divided into three groups, each embracing several sub-groups or modifications; first, the group of theories which define beauty as being something actually resident in the object, organic or inorganic as the case may be; that is, beauty is an actual characteristic of the object, not a reaction of the observer; beauty is an objective aspect of an object even as is its redness or solidity. A modification of this theory supposes that beauty resides in, or is a characteristic or quality of an object when its parts are arranged in a certain manner, namely, an aesthetic arrangement. But this latter, as well indeed as the former, implies a certain preference or choice attitude on the part of the observer and hence denies its own statement. A second, larger group, find the essence of beauty to be in imitation. What imitates nature or fact, what is the result of successful use or exploitation of a material, that which produces illusion, contributes to desirable social results, which reveals or embodies truth, universals, ideals and the like,—such things are beautiful.

One criticism to be made of these theories is that they rather indicate what beauty does secondarily than what it is immediately; what the consideration or experience of beauty may lead to, rather than the immediate nature of the experience of the beautiful. A third group, much more psychological, embraces such over-lapping but distinctive emphases as that beauty excites the emotions, is the projection of an organic feeling of pleasure into an object, "as if" it were a quality of it, that it enhances vitality, causes a synthesis of experience, a certain harmonizing of ordinarily more or less unrelated emotional attitudes, a certain intensification of experience with a feeling-tone that is apparently impersonal yet pleasurable. One may, of course, regard this as a definition made, more or less, on the basis of introspection and to that extent not objective, but such things as religion, beauty and the like, simply because they are not observable traits of an object or of the organism, but are the product of the action and the interaction of the two, being primarily and pre-eminently conscious experiences, cannot be as impersonally defined as can more objective things. And, after all, our aim here is not so much to definitely and irrefutably settle the relative merit of several alternative possible definitions of beauty, as to show that it is a type of experience, a species of behavior, involving the past experience of the personality, and involving, also, adjustment and consummation. And from this point of view, the third class of definitions, above, is adequate and satisfactory, in addition to involving, per se, more objective and more factual definition.

But, however we do define the word, it is clear, as we have already remarked, that it is essentially a personal and individual reaction and, as such, has little social significance except in so far as what individualism is shown in reactions to beauty will be, in part, the result of living in and absorbing the culture of a definite social group. The reaction to what is called beauty is a type of response that has its roots in the conditioning of the individual, and may refer to any object of the environment. It cannot be confused, though it may be mingled, with other reactions; such, say, as the more specifically religious. Thus there is a field of the religious-beautiful, the beautiful in nature, the beautiful in manufactured objects, and so on, where the experiences are, at one and the same time, worthy of the appellation beautiful and also something else. But, where beauty is personal in this sense and with these limitations, art is not.[1]

[1] For specific treatment of theories of the nature of beauty, see, particularly, Bell, Carritt, and Ogden, Richards and Wood; see Santayana for

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The Nature of Art. An individual may, with assurance, call what he will beautiful; he may be mocked by others and thoroughly disagreed with, but if the object does, as we have indicated, give him pleasure in the contemplation, an impersonal sort of pleasure not akin to that of ownership or manipulation or contact, if it does synthesize his emotional reactions, if it does give him a definite reaction apart from actual contact for which the word "thrill" is somewhat descriptive, if he objectifies the pleasure and the thrill and thinks of them "as if" they were qualities of the object he is correct, for all the social counter argument, in his judgment. The individual is the first and infallible judge of what is, to him, beautiful. But the individual may not, except in a shallow and dubious or delegated sense, decide what is art. Art is decided on the basis of social judgment to which, to be sure, the individual contributes his opinion, but which opinion is usually ignored unless it is also that of the majority. Art is that which appeals to the group, and does for the group much what beauty does for the individual. All art, however, is not and need not be beautiful; there is art which would never be called beautiful but which is emphatically art. That which we call art is a basis or stimulus for a certain type of social experience, in which individuals share in proportion as they are able to react more or less in terms of the wide-spread emotional attitudes involved; on the basis of which they exhibit more or less the same attitudes and even overt behavior, particularly when the art reactions, as in the case of patriotic stimuli, are fairly well established and stereotyped.

As has already been implied, in view of the definitions we have adopted, the reaction to beauty and also to art, for all the latter's social bearing and orientation, is essentially a matter of personality adjustment, a matter of attitudes, emotions, feelings and their consummation, rather than of thinking, *per se,* or of overt behavior. To be sure, there are types of behavior which are aroused by the stimulus of the beautiful and the artistic, but the behavior, as such, to an external observer, has nothing particular to relate it to its stimulus. Like the conventional behavior of the non-religious individual in a specifically religious situation, it is not always possible, except in degrees of probability, to decide if the art or beauty aspect of a situation, *per se,* is the stimulus. What the individual experiencing beauty, art

a more detailed general psychological treatment, Stein for a behavioristic, less theoretical treatment, Buermeyer, for a social-psychological approach. Confer, also, Parker, for general theory.

or religion may do, might and could be done by others without the specific emotional, "as if" and belief back-ground which is the essence of the cogent behavior, and which involves, to some degree and in some sense, consummation and adjustment to the stimuli as specific art or beauty stimuli.

Art and beauty, as experiences, as types of behavior, share with religious experience and behavior, the wishful, "as if" attitude. Art and beauty stimuli-situations do for us what the world of non-beauty and non-art forbids or denies; in the realm of art and beauty we symbolically and at second-hand consummate drives and desires that the world of mere fact, lacking the specific values, inhibits. In art and in beauty we give and take what life otherwise, either altogether or at the moment, is lacking in. Where the dream, whether in slumber or in musing, depicts for us the satisfaction of wishes in terms of pure fantasy and with little or no reference to reality and perception, art and beauty are, at one and the same time, real and factual, and yet ideal and imaginative; they are percepts, yet they satisfy and gratify what, for the moment or for all time, cannot be otherwise satisfied than in fantasy. They compensate for the vicissitudes and deprivations of existence; they are realization even while they are not, and they give an objective basis for the consummation, vicarious and symbolic, of drives and needs otherwise balked.

Art, furthermore, because of its social aspects (whereby art is art in virtue of the fact that a group acknowledge or designate it as such), is in the sense of the word as we used it in previous discussion, a language; a language of the emotions, of the wishes and the desires common to the group. Such groups may be national; they may be also religious groups; they may be groups, smaller and more select, with specific ideals and training in common, with specific desires embodied in their art and a consequent language of art that is unintelligible, as such, to others. Art is the embodiment of the wishes, the dreams, the ideals, the imaginative hopes of a group; it is an "as if" for all of them, and the ability to share in the art is the *sine qua non* of membership in the group. In this sense, religion is also a language though the personal element of salvation in religion adds an emphasis in another direction, relating it to the saving power of beauty. That is, while religion is essentially a social phenomenon (as contrasted with magic), none the less religion, except perhaps in the earlier cultures, is more emphatically and deliberately and consciously a system of beliefs

and compensations for personal betterment and more adequate personal adjustment; in art, on the contrary, while the personal element is there (for all that an individual does is necessarily personal), there is not the same emphatic element of personal value and achievement and gratification as in the case of religion but a greater emphasis on the social relationships, the social purposes and ideals. The compensations of art are perhaps more subtle than those of religion. There are other points of contrast; religion saves and compensates as much in the future as in the present, promising that some day all will be well even if it is not now; art, on the other hand, while it may have a future reference, particularly in the instance of the patriotic music of a defeated group, is prone to emphasize the present; here and now the compensation; the dreamed of desire is "as if" it were consummated, now, in this social moment of reaction. But these are all emphases and distinctions that shade into one another and should not be taken as too sharply distinctive and definitive. In so far as what is emphatically art to a given group (in the instance of a given monument, or piece of music or poem), is something that a given individual, not indoctrinated with the parallel and co-ordinated hopes and ideals and purposes of the group, reacts to as merely beautiful, it does not then, to that extent and for these reasons, constitute art to such an individual. What is art to a given group may be merely beautiful to outsiders, even as that which to a given group is a religious object or situation may be, to non-religious outsiders, merely a situation or an object to which they react as to the beautiful. It depends, as should be clear, on what patterns of adjustment function, what "as if" attitudes and beliefs are active, what purposive behavior is involved, whether a given situation or object or person is to be called beautiful, religious, or to be included in the group of art stimuli.[2]

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Desire and Achievement. In exhibiting the compensatory and wishful aspects of religion and experiences in relation to beauty and art, there was no implication that these are the only functions these things can perform or the only value they have. While we are not specifically here writing a text on religion or

[2] For Art as contrasted with Beauty, see Hirn and Grosse for origins, Harrison for affiliations with religion, Parker for general analysis, Rutter, Pfister, Poore, and Flaccus for illustrations and comment on history and social evolution and the present significance of movements in art, Seldes for excellent treatment of the lighter aspects of art and comedy.

art and beauty and cannot, therefore, follow out all the implications and ramifications of a fascinating field of behavior, nor touch on the origins or the futures of any of them in detail, it is perfectly clear that both religion and the art-beauty experience may be productive not merely of compensatory adjustment but also of re-directed efforts and energies in the immediate present, so that they may have another and a better adjustment value than the one we have here been particularly interested in. But even in this sense of adjustment, the fundamental argument still holds good, in that it is essentially belief in a certain order and a certain value of experience which brings about, whether purely or relatively, in an imaginative or practical way, a better adjustment of the individual to his environment, gives him a better field for the play of his drives, makes life more worth while.

In short, we have, in the instances of art and beauty reactions and adjustments, much the same situation as with reference to religious adjustments; namely, the finding, in specific situations where there is beauty, or in the presence of that which is art, an opportunity for the expression and the consummation of drives which, in other than the specific situations or in the absence of the specific objects, cannot be or are not consummated, or are consummated less adequately and satisfactorily, all in terms, of course, of the existing patterns of the individual. And it is emphatically implied that many, if not perhaps most of these patterns of consummation are, in fact and in value, inferior to other possible and more factually related patterns, that they have been built up in the place of these possible other better and more realistic patterns, and that it has been the course of experience of the individual, his thwartings, and his balkings in the direct and factual field of consummation which had led, inevitably and necessarily, to the building of patterns of substitute, second-hand, symbolic and deferred consummation. In the light of this general statement, of course, some qualifications must be made with reference to the specific beauty, art and religious situations and objects. Thus, on the whole, the reaction to beauty and the enjoyment thereof, may and usually does involve less of the substitute and symbolic aspects of adjustment, in that beauty, as such, as a type of reaction or experience, is often not so much a substitute enjoyment or consummation, as a direct and first-hand one. Beauty is often its own reward, in and at the moment of enjoyment and only if and when it becomes, as contrasted with the

more ordinary drabness of life, a compensating experience for that drabness and unpleasantness, is it to be considered a compensatory and therefore a second-hand consummation. Life should and could, in its immediate having and living, include and embody beauty, but an individual lacking all such contacts, who lives and moves and has his adjustments in situations and with reference to objects emphatically unpleasant and actually ugly, would then find a compensatory value in the contemplation of the beautiful in some selected environment, not usually his own, which was open to him by chance or on rare occasions. In so far as the experience of beauty is a by-product and an integral part and portion of everyday adjustments and consummation, it is not a compensatory resource of a frustrated personality.

But the case as regards art, religion and literature as a form of art, is not thus to be qualified; art and religion, except in so far as they also involve beauty in the above integral sense, are purely compensatory. In art we symbolically, and in terms of substitute reactions, satisfy drives and achieve consummations that reality forbids, we act "as if" the art situation were a fact situation, and achieve a vicarious satisfaction in terms of the activity involved. In religion, too, the situation is the same; we live and move and attain satisfaction in terms of belief, of symbols, of behavior on the basis of an "as if" orientation. In the instances alike of art and religion, and of beauty in the non-integral sense, it is also here claimed that other and better patterns of adjustment and achievement could be had, provided, of course, the environment, in its physical and social aspects, was reformed in terms of that knowledge of human nature which is now ours because of the findings of science in general and of psychology in particular.

Somehow or other, civilization and culture has not, as yet, produced a type of environment which is most adequate for the complete and satisfactory living of the animal we call human, so that the phenomena we have been discussing are not particularly a characteristic of present-day life, but are persistently shown in the record of history in general. And, in the next chapter, in our consideration of philosophy, we will be concerned with tracing, in summary, the constant and characteristic effort to make life more worth while, efforts which, either because of ignorance, or because of the too-hectic and persistent endurance of custom and tradition have not, as yet, met with anything like universal or complete success but which, it is here con-

tended, could be brought to at least much finer fruition on the basis of what we now know.[3]

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The Creator and the Consumer. It will, however, pay us to examine a bit more closely some of the behavior involved both in the creation of an object that is beautiful, the creation of what comes, socially, to be called art and, finally, the attitude toward either or both of them of another individual than the creator, who appreciates and in a sense, "consumes" the object, enjoying it as observer and partaker, reacting to it in terms of the specific beauty or art attitudes and patterns which we have discussed. The artist, in creating beauty, either objectifies his own desires and his own preferences or else commemorates those of his experiences which have great and enduring value to him, in which his own pleasure and desire was objectified and consummated, picking out particularly those experiences which have or have had the elements of harmony, thrill and the other characteristics we have discussed, not necessarily imitating nature, but recalling and perhaps idealizing the experiences in question. What is indifferent, what is casual, what is disharmonious, what is thwarting, is not thus commemorated as an object of beauty, though such experiences may produce, as a contrast, the creator's conception of what is desirable in their places. What the creator longs for, he builds in stone, in paint, in music, in words and, as we shall see, it is particularly in literature that this compensatory effort, this striving to create what nature and society have denied and thwarted, is clear and distinct.

The consumer reverses the proceeding; in what is exhibited, casually or deliberately, he finds what to him is beautiful, stimulating, inspiring, placating; i.e., what portrays, suggests or resembles the objects or communications he is striving for, what he has found or hopes to find satisfaction and joy in, and in the process of thus contemplating, finds all this anew. And when not one but many such individuals thus enjoy, thus find compensation, thus find the exemplification of their dreams, we have art; and when, particularly as in literature, we see individuals represented in various situations, struggling with

[3] See in addition to the references on Desire and Belief, in general, as previously given, the psychoanalytic treatment of Mordell, and the more constrained treatment of Prescott. See also, Lewisohn and Ellis for general functioning of aesthetic motivation and behavior, and compare Veblen, recalling general previous treatment of so-called instincts. Confer also Note (6).

various problems, enjoying various freedoms, the whole process is intensified.[4]

[6]

Function of Literature. While the term literature, like the other abstract and general terms we have been discussing, is widely and consistently misused, so that even business firms issue "literature," we will mean by the word that type of linguistic production, that species of art, which arouses the emotional and attitudinal and adjustive reactions which we have discussed in connection with beauty and art in general and which embody the "as if" reaction, which vicariously or symbolically results in adjustment and consummation. We may read for information, to pass the time, or to find in the material of literature what we cannot have or have not had in reality, but for which we have the drive, balked or without opportunity for satisfaction and expression. In drama or in novel, in poetry or in prose, in essay or in mystery tale and adventure story, the individual is and does what he is wont to wish he were and what he would do if circumstances permitted. We identify the self with the individuals in the story who most nearly represent what we would be, and who do what we most yearn to do, and into their emotions and problems we enter, sharing with them their trials and tribulations and ending with them in successful achievement or sharing their sorrow and frustration. In them and with them we live another, a better, a more enterprising life; a life on a higher and a more satisfying plane and become, through such projection of the self, compensated for the deprivations of ordinary existence.

We believe, for the moment, or while the effect of literature still lasts, that with a fairer chance and better opportunity we might yet do and be all that we have seen done and accomplished in words; our belief in our own worth is enhanced, our belief in our destiny is again renewed; we not only live afresh for the moment, but we receive stimulation for renewed efforts in the world of plain prose when we come back to it. While the satisfaction is thus partly vicarious and partly in terms of incentive and stimulation, it is satisfaction equally real with that of religion or philosophy. Art and beauty, and the particular forms each of these take when in the form of music or literature transport us to another world, the world in part of make-believe, but the world also of otherwise frustrated satisfactions and compensations, and while our belief in a given hero

[4] See as for Notes (1) and (2) and (3) above.

or heroine may be momentary as compared with our more sustaining and more continuous belief in a God or a saint, still the effect, however momentary, is the same; is founded on much the same mechanism and performs much the same service. Where, in a religious mood, we believe in the final coming of the Millennium, in the realm of art and beauty that is literature, we believe that the Golden Age is, for the moment, here and now. Both sustain us in an arid moment or mood, both compensate for the dreariness and the balkings of life, both stimulate us to increased and better co-ordinated efforts, both satisfy, vicariously and symbolically, thwarted drives and unconsummated longings and desires.[5]

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Summary. As we have already indicated, the treatment afforded such types of belief and compensation as religion and the art-beauty complex is necessarily brief, and for two reasons; first, we are not here interested in the details of these fields, such being reserved for separate treatment elsewhere; second, what we will discuss, in the next chapter, as "philosophy" will show in more detail and on a larger scale the effect of just such mechanisms as are involved in both religion and art. What is fundamentally involved in the discussion of all of these is the possibility of the development and the use of a point of view which would be as broad as the accumulated factual experience of the race and of humanity in general, and which would, therefore, offer an adequate and objective basis of adjustment and compensation with a minimum of the "as if" attitude. Religion, for all its distinctive aspects, and art and beauty in spite of theirs, are really also philosophies, generalizations of value and of experience interwoven to form a more or less consistent point of view and platform of behavior.

In all of them, however, general or detailed, is some element of actual experience, personal or historical, which is interwoven into the fabric of the final belief; in all there is also the element of induction, justifying or seeming to justify the hopes, the desires, the needs of the individual or the group, as the case may be; all are systems of adjustment and consummation. They

[5] See, particularly, Richards, Lewisohn, Ellis, Mordell, Stein and Prescott. Compare also, the remarkable success, popularly speaking, of biographies and autobiographies, and the significance of recent novels. Typical examples: Lewisohn's *Upstream,* Ludwig's biographies of Napoleon and Bismarck, and the like, and such novels as Butler's *Way of All Flesh,* Maugham's *Of Human Bondage,* Erskine's trilogy, Rolland's *Jean Christophe,* etc.

all have, in varying degree, a social reference and contact, yet they all allow for individual needs and peculiarities, being in each individual instance a compromise of the social and the personal. And, in the last analysis, as we have several times pointed out, it is these systems of belief, these systems of values and platforms of behavior, whether it be in the case of a normal or an abnormal individual, are most completely expressive of the personality, its make-up, its problems, its purposes. And, as we have constantly endeavored to show and will continue, in succeeding chapters, to argue from still other points of view, there is no reason why psychology may not, for all the present ignorance of many processes and many types of behavior, be a real and factual science and yet be on a higher level than that of mere physiology. What the personality, the organism as a whole does, is pre-eminently the concern of psychology and if this concern is attended to in terms of what facts we have, in terms of an objective scientific methodology, if the same technique which has raised the physical sciences to their present high level of efficiency is used, there is no reason to doubt that we can, some day, have an adequate and inclusive science of the human personality as such. There is no question, of course, that what the organism does as a whole is to be explained in terms of structure, on the basis of determinism, heredity, and all the other fundamentals we have discussed but, none the less (and recalling the arguments, pro and con, of emergent evolution as presented), it is true that what the organism as a whole does is to be understood equally as well in terms of experience and conditioning, in terms of the purpose of the organism at any given moment and in the situation as seen by it; which means, of course, in terms of patterns of adjustment, belief and "as if" configurations, Gestalt, or whatever other terms we use to designate the present effectual power of past experience and the patterns of earlier conditioning.

When an individual enters a house, walks up stairs, and then performs one or more simple, more or less stereotyped acts of behavior we cannot and do not adequately understand what that individual is doing by virtue of merely enumerating the movements, measuring the energy output, the direction of effort, and the like; we can often only understand even apparently simple behavior in terms of understanding the purposes, the plans, the frustrations, the compensations, the knowledge and the beliefs, the values and the needs of the personality as a whole, and the more complex the behavior, the more necessary and indispensable in this synthetic approach. Man, be he ever so simple, even

when far down in the scale of intelligence, even when extremely abnormal and pathological, is never to be understood in terms of superficial observation; much more is involved, and that more cannot be understood except in terms of an individual's philosophy, whether deliberate and technical, or hap-hazard and incoherent, by which we mean, as we have already stated, his summation of values, hopes, needs, knowledges, and beliefs. We all live, at least partially, in terms of what, when it becomes too profound and too eccentric for associated living, we call delusion; and to say this is not to yield to pessimism nor to imply any doubt as to the ability of humanity to ultimately approach much nearer to reality and to adjust and consummate infinitely more wisely and advantageously than is now usual. It is simply to say that, as things now are, as life is now organized, we do not have enough first-hand, solid fact on which to base inevitable, conclusive, verifiable and universally applicable general deductions; we now must and do proceed in terms of trial and error, partial gestalts and inadequate beliefs, for even these adjustive patterns are themselves, as we have suggested, open to the same play of trial and error, replacement and rebuilding, as less synthetic patterns. It is possible that, as things are now, science has enough knowledge to make the plane on which we build our beliefs a more substantial one; it is possible that we need no longer build beliefs so largely in terms of insubstantial hopes and desires that have been frustrated, but that we could, if we once started, construct an environment, physically and socially so much nearer to the real needs of human beings that the average individual would have to indulge in far fewer, and far less fantastic systems of compensatory belief. If, in short, we could realize and consummate our needs and desires here and now, we would to that extent need less of the symbolic and deferred consummation and compensations of belief and delusion. To what extent this is possible we will not now consider; a later chapter will discuss this particular point. On the other hand, to stress a needful and constantly remarked point, all this in no sense contradicts the strictest objectivity, the strictest dynamic structuralism, or the strictest determinism. Purpose, belief and a philosophy of life, whether adequate or inadequate, are always and everywhere, depending on the preferred phraseology, a present set of the organism, a gestalt, an organization of past experiences, a hierarchy of patterns, or a co-ordination of segmental tensions of the organism, and in no sense a contradiction, but rather an emphatic instance of fundamental principles. To deal with an individual's philosophy is

merely to deal with his personality output, his personality status and leanings, his personality sets and readinesses. But to do this is also to deal with wholes and with syntheses and to get away from the atomistic and fragmentary approaches of the earlier efforts at a science of human behavior. If we remember and realize that behavior is always the behavior of the whole organism we will appreciate the point in question, and ultimately frame an adequate behaviorism of personality.[6]

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[6] This brief and very summary treatment of art, beauty and literature, as well as that of religion in the preceding chapter, will be expanded in forthcoming books from the present point of view of belief and compensation, adjustment and consummation, but with detailed reference to origins, growth and evolution, present functions and probable or possible developments in the future, under the specific titles of "Art and Literature", and "Religion and Life."

CHAPTER IV

PHILOSOPHY AND PSYCHOLOGY

1. The Purpose of Philosophy. 2. Philosophy and Behavior. 3. Verbalization—Orientation. 4. The World of Reason. 5. The Problems of Philosophy. 6. Knowledge and Experience. 7. Innate Ideas. 8. Religious Problems. 9. Other Associated Problems. 10. Behaviorism and Personality. Bibliography.

[1]

The Purpose of Philosophy. In the introductory chapter on the psychology of belief in general and in the succeeding chapters on religion and the art-beauty reaction as specific types of belief and "as if" attitudes, as types of adjustment and consummation in terms of the symbolic and fantastic, it was frequently pointed out that to draw sharp and definite lines of demarkation between these various relatively specific attitudes, or between them as a group and what is roughly and uncritically called philosophy is impossible in any but a pragmatic and common-sense way. Religion verges, at times, into a philosophy; the search for and the enjoyment of art and beauty may likewise, at times and in certain instances, deserve the designation philosophical and, as we have seen, a given attitude may sometimes show mingled aspects of religion, magic, art and the specific beauty reaction. In each and every instance, to recapitulate, the reactions in question, under whatever relatively specific heading they should best be finally included, are all essentially attempts at symbolic and substitute consummation of drives and needs; are adjustive efforts, are strivings of the integrated personality, regarded as a complex of heredity and prior conditioning, to achieve what best suits the patterns of behavior which have been developed and to attain to a relatively satisfactory solution of the problems of existence. There is no need, in this chapter, to repeat in detail arguments of the chapters on religion or on the art-beauty reactions, for philosophy but does, in different degree, or under different circumstances, or for different individuals, what these other systems or types of adjustment and compensation do in their own way and in their own sphere. A generalized statement will show the essential relationship of philosophy to the other belief systems we have already discussed.[1]

[1] The specific contribution of this general chapter on philosophy will be found largely in Sections 5 to 9, where the persistent problems of philos-

By the term philosophy is meant nothing essentially different from these other instances of symbolic adjustment; nothing essentially different from the belief and "as if" attitudes already discussed; the difference, in so far as there is any, is not as regards purpose or the psychological behavior involved, but rather as regards detail, the span of significance or universe of discourse, the profundity, i.e., the alleged universality, reality and rectitude. The philosopher believes, even as does the religious devotee; he acts "as if" in quite the same way and with quite the same compensatory values as does any other believer on a large or a small scale, and he indulges in symbol and in fantasy as much as his less learned and apparently more naïve fellows. In short, philosophy, like the other types of belief, is a device to sort out experience, to orientate the personality, to achieve adjustment and satisfaction and, like the other devices or systems, uses frequent verbalizations as substitutes for first hand, factual experience. "Philosophy," a student once wrote, "makes *exquisite* that which was heretofore merely implicit." This is no mean statement.[2]

If we survey that huge mass of story, myth, belief, ritual and social code which depicts for us the ages of early human experience, before the minds of systematizers had co-ordinated and compressed it, apparently extracting from it a moral and a significance that was actually put into it by their own hopes and frustrations, we find it, after all, a very familiar field. It is, to be sure, primitive, but it is essentially human, all-too-human, and reminds us, if we are frank, of our own infantile efforts to extract from puzzling experience a meaning and significance for which we had actually as yet no proper factual basis. Philosophy in the formal sense it is certainly not; it is rather the material, the matrix from which it is to emerge when times of comparative leisure and greater interest in and need for abstractions and generalizations permit. Experience was still, as it were, enjoyed

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ophy, common alike to formal and historic systems of thought and to the field of concrete religion, are discussed in some detail, and their fundamental psychological nature indicated. The references to this chapter are collected largely in a detailed footnote following the last section, and endeavor rather to indicate allied and associated points of view with reference to the general argument on philosophy, than to cite specific passages in support or in opposition.

[2] The reader who is interested in a more detailed presentation of the very summary outline here offered, may consult two previous publications of the author: "Philosophy and Education, Part I" (1921); and "The World of Reason and the Original Nature of Man" (1919), both published by the University of Buffalo. A consistent, detailed treatment of the History of Philosophy from a psychological point of view is in course of production.

per se, even when, in memory, older and more crucial experiences were resurrected and relived, without the realization, at first, that such resurrected experiences were crucial or typical. No Aristotelian nor yet modern logic controlled the conclusions drawn from such crude experience,—logic was not yet a subject of discourse nor a conscious discipline in thought. Rather, crude analogy, the seeing of some resemblances and the taking for granted of the rest; chance association whereby things joined in unique experiences became thereby joined everlastingly in memory; and, above all, perhaps, the wish, the impulse, the inner urges, based on the very nature of the untutored individual—these were the categories under which experience as directed, understood, lived, passed on.

As in the individual, so in the group, if it have but a sufficiently long development and growth, with accompanying multiplication of such legend and story, there comes a time when consolidation and co-ordination of the varying experiences of different individuals and different generations becomes possible, indeed, necessary in view of the accumulated total. With such consolidation goes modification, the picking out of the most frequent, the typical, the universal, and the compressing of the irregular to fit the type. It becomes, in the process, more than merely typical; it becomes representative of the experiences, the mode of living of the group; the individual, by reason of a concrete typical experience, lives the experiences of the group. It becomes still more; the typical experience, generalized from many concrete experiences, becomes, in some sense, coercive; it shows not only what has happened to the members of the group, it shows also what should happen; it becomes a standard of good, of proper, of normal, of social behavior. It follows, still further, when the experiences of the group have crystallized into such standards, that some form of initiation is necessary for the growing generation which will eventually replace the elders; conscious, formal education in these matters becomes necessary, and philosophy becomes didactic. At this point, then, whether we call such elaboration of experience and such elementary control of group life thereby, philosophy, we do find associated with such reflective activity a definite effort to apply it, to make it coercive for individuals and group; it is not woven merely for its own sake; the thinking and the thought are directed again to the control and the manipulation of the source whence they came,—the concrete field of experience of the individual and the group. Philosophy is never, whatever its apparent aloofness and worldly indifference, for its own sake; philosophy is always and

everywhere, even when it most denies it, for life and living. It is a system of beliefs, whatever the degree or the accuracy of factual reference, whereby men live or endeavor to live.

To be sure, the History of Philosophy, as a summary record of the attempts and achievements toward such general human orientation, does not always make clear this practical reference; it is only when some little attention is paid also to the situations in which the various systems of philosophy arose, whether social or individual, i.e., when one looks to the economic, the religious, the racial and the military conditions of a given period of history, or to the concrete personal problems of the individual philosopher, that one sees clearly the compensatory, the adjustive, the solution-seeking, "as if" aspect of philosophy in the concrete worldly sense. Philosophy too often claims an independence from experience and an indifference to the world of first-hand experience that the facts belie. The essential and primary purpose of philosophy is not at all the aloofness and the transcendentalism which many of them claim and so conspicuously exhibit verbally; this is but the form in which, whether wisely or foolishly, the majority of systems of beliefs have been presented. All Critiques of Pure Reason have, as an even more significant corollary, a Critique of the Practical.

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Philosophy and Behavior. In short, as with religion and magic, and as in the instances of art and the beauty-reaction and attitude, that type of human activity which we call philosophizing, however much disguised in symbol and abstruse verbalization, has as its constant and fundamental purpose, the controlling, the standardizing and the justifying of behavior; it aims to orientate the individual and the group within the domain of experience, past, present and to come, and to make order out of the tremendously complex, and very puzzling and sometimes very real chaos in which we live; to find and, if possible, to guarantee us, more completely and more consistently, such ways of living and adjusting as will enable us to avoid sorrow and frustration and to achieve, if not supreme happiness, at least a modest content and satisfaction. Philosophy is, in this ideal sense, a psychology; it gives us a summary of the abilities and needs of human nature, an inventory of the kinds of experience and the materials and the situations of this world in which we live. However abortive in actuality and in practice, in theory philosophy is an effort to base the interaction of Man and Nature

as little as possible on unsupported hope and sheer delusion and as much as possible on factually referred criteria of behavior.

But this, as has been said, is what one might take to be the ideal sense and significance of philosophy. In actual practice philosophy has, like religion, too often deferred to hope and to wish, to belief in terms of fantasy and delusion, to sheer "as if" attitudes that have no factual reference at all. The History of Philosophy is, at one and the same time, one of the most heroic, the most human and yet, in an equally just sense, one of the most unsatisfactory efforts that culture records; in spite of evidences and personalities here and there in the long record who have seen the possibilities of an objective and factual approach to the problems of life, the great majority of the system-makers have lapsed and stagnated in fantasy and delusion, in beliefs and "as if" constructs and fictions that have, for their support, the flimsiest of evidences or even no objective reference at all. Philosophy, only too often, has been an heroic attempt to create, out of the void, and with no technique but that of language, a world of certainty that, at bottom, was only a world of belief. It has, as such, failed. Nothing else, with the exception of religion, and we have already made it clear that religion and philosophy are, in many ways, indistinguishable, has made such an heroic attempt to thus plot the map of the universe and to make clear to individuals and group alike, in terms of belief, what is to be done and how, and when and where, so that what the organism craves may be symbolically found and what it hates may be fantastically avoided. To be sure, in this best of all possible worlds, one must, as we have pointed out, believe and have faith; the important question is, faith in what, faith because of what, on what basis of even partial evidence, on what foundation of even semi-demonstrable justification?

From our present point of view, philosophy and psychology, taking them in their most specific and antagonistic senses, have each proceeded at the solution of much the same problem, but from different approaches, with differing techniques, with different measuring and valuing devices and, finally, with vastly different results. Psychology, as we have defined it, is the science of human behavior, and human behavior, as we have pointed out, is always and everywhere the behavior of the organism, the integrated, striving, purposive personality. What psychology, then, aims at is such understanding of structure and function, such understanding of the relationship of drive and mechanism, such appreciation of education, training and conditioning, whether on a large or a small scale, that it will be able to guide, prevent,

anticipate, cure, remold human behavior, always with an ideal in mind, but such an ideal that is both realizable, not merely fantastic, and also worth while in the immediate having and in its capacity to lead on to more and even better. Philosophy, to be sure, has theoretically aimed at exactly the same thing. But where philosophy has dealt largely with verbal consistency, and with the effort to justify, to reason, what reason alone is concerned with, ignoring the other world of psychological and biological fact, building up vast systems of belief for the symbolic consummation of concretely thwarted drives, psychology, on the other hand, in so far at least as it has been a science and not merely itself a verbal philosophy under another name, has been concerned with fact and reality and sought to adjust human beings in terms of the actualities of human nature and the realities of the physical environment. Psychological findings, in the proper and present sense of the word, have been scientific, demonstrable within the limits of present knowledge, involving like all science a technique of objective verifiability, whereas philosophy has been content, in the main, to be verbal, inductive, wish-fulfilling, hortatory, delusional, absolutistic and aloof.

It is clear what is needed; it is clear what might be done and will, eventually, be done. As we have said, in so far as psychology remains a mere physiology it falls short of its real purpose and its ultimate value; in so far as it becomes, as it sometimes has become, merely another speculative philosophy, it loses its value and merges with the rest of verbal exhortations and fantastic verbal imaginings. But in so far as it is, at one and the same time, a science, sticking close to facts, and yet is also a philosophy of human values and human adjustments in terms of personalities, it becomes something greater and better than either what physiology is or what conventional philosophy has achieved. What is needed is, in effect, a philosophy of behavior, one that is at the same time psychological and yet philosophical and, lest it seem that this is peculiar to psychology and an admission of weakening, one need merely turn to the field of the so-called natural sciences to see, on all hands and in every direction, the same effort, now that an immense amount of detail has been accumulated, to rate the significance of all the details in terms of broader and more inclusive concepts. In short, what is being advocated from the point of view of psychology, is likewise being advocated from the point of view of physics, chemistry and the other physical sciences.

Psychology need not cease being psychology in its effort to make a more complete picture and to see, more clearly, what is

the ultimate and combined significance of the multitude of physiological and atomistic details which it has collected; to see, if it can, what is the meaning, the origin, the development of personality, how it goes wrong, what its compensatory devices are, how it achieves either a real or a fantastic solution of its problems. And in doing so, while it need not cease being psychology, it can also become something greater and more valuable than the present atomisms of behavior exhibit,—a philosophy of life, a philosophy of human behavior, a behaviorism of personality.

[3]

Verbalization-Orientation. One outstanding factor, apart from the ever-present effort to achieve symbolic in place of frustrated concrete achievement, which has brought about this quite unsatisfactory state of affairs and defeated the avowed or implicit purpose of any given philosophical system, is the confusion of verbal with factual consistency and reference. In our earlier examination of the relation of verbal to other patterns of reaction, such as the motor and the emotional-visceral and the perceptual, it became clear that in no sense is one the equivalent of the other, and that adequate or semi-adequate patterns in one field can in no sense take the place of or *ipso facto* give rise to adequate patterns in other fields. To have a verbally consistent answer to a problem, consistent, that is, with other verbalizations, is not at all to have a pattern of reaction that is necessarily adequate to meet facts or to overtly adjust the integrated personality which functions in terms of more than merely verbalizations.

In this sense, as we have seen, religion and magic are largely verbalizations except in so far as adequate first-hand factual experience is at the basis of the verbal conclusions which eventually result, and philosophy is pre-eminently verbal in this sense too. Naïve factual orientation, while it may be lacking in many ways and even result in abortive and unsatisfactory adjustment because of the meagerness of factual reference, is yet the proper type of basis for a complete system of behavior which, when made more extensive, is properly called, in our sense, philosophy. Philosophy, on the other hand, while it usually lacks the aspect of incompleteness of such naïve, factually referred behavior, its completeness being largely verbal, results just as inevitably in the same abortive and unsatisfactory adjustment; the two are but the opposed extremes of equally undesirable emphases and specialization. In particular, phi-

losophy has, in its verbalizational solutions of problems and situations, emphasized the so-called world of reason and logic, i.e., has done violence to the facts of the integrated and adjusting human personality, and divorced from its properly subordinate position of a mechanism that type of behavior which we call reasoning and thinking, and made it predominant and preeminent. Philosophy, in the historical and actual sense of the word, has too often emphasized what might be called the world of "pure reason" and, in so doing, not merely ignored, in the completer sense, integrated human nature and inverted the relationships of drives and mechanisms, but has also achieved a false and delusional, yet alluring and symbolically satisfactory system of beliefs and patterns of "as if" adjustment.

[4]

The World of Reason. It cannot be too strongly insisted or too often repeated that this division of the human being into a so-called "knowing" or "intellectual" or thinking part plus an emotional, plus sundry other aspects or capacities, and then ranking as of first and prime importance the activity and the products of the knowing faculty has resulted in delusion and chaos. This so-called knowing faculty, in the light of the edicts of the world of reason, is the only behavior or ability of a human being which gives, as a result, adequate knowledge of the universe; all else is labeled subjective, transitory, unsatisfactory, temporary, personal, erroneous and delusional. Actually, we live in a world of beings who exhibit many "action patterns," many types of conduct, and the intellectual is but one among them; nor is the exercise or functioning of it, in and of itself, the purpose of life. We do not live to think, we do not live to express emotions, we do not live either to gather knowledge or to be played on by beauty or the horror of life; rather we think, if we can, in order to preserve the life we have not asked for; we react emotionally for much the same sage reason, though the reason is usually an afterthought. In short, as we have consistently and persistently maintained throughout the whole book, we endeavor to adjust and consummate, achieve and attain, as synthetic personalities,—and reason is but one tool or mechanism in terms of which we strive to do so.

Yet philosophy, in its historic record, with rare and seemingly futile exceptions, has persistently and consistently ignored this integrated aspect of the human personality, and sought to achieve standards and methods of adjustment and consummation

almost entirely in terms of one mechanism. This, in itself, though we cannot here engage in a detailed analysis or discussion, involves "as if" and belief attitudes and assumptions and clearly indicates also, a defeat of more direct efforts at consummation and achievement. The "flight to reason," particularly when called "pure," is usually an acknowledgement of the frustration and inadequacy of other types of effort, of defeat and weariness and a flight from reality to the realm of delusion and compensatory fantasy.

To sum up, then, and without following out the very evident metaphysical implications which bristle throughout the whole argument, any analysis of which would be very much out of place in this simple discussion of the nature of philosophy, such activity has too often and too persistently resulted in merely a closed system of verbalizations, with an appropriate method, which has been descriptive, at second hand, of a very limited portion of the universe and a very select aspect of human behavior. In short, in the formal sense, philosophy has been fundamentally merely a system of co-ordinated and mutually self-consistent verbal reactions on the basis of certain equally fundamental "as if" attitudes and assumptions concerning the nature and destiny of human beings. In so far as philosophy is merely this, it has no significance in any factual sense; it is then, as we have already pointed out, merely a system of beliefs, verbally expressed, as a basis for associated and congruent belief-behavior, compensatory and symbolically adjustive. Philosophy, in the larger sense of the word, in the better and more factual sense, can only come into existence when and if a less biased, a less narrow, a more factual survey of human nature and the world it lives in is achieved; a survey which will include not merely the facts of the environment, as does science, but also the facts of human nature, as does psychology in the scientific sense and, finally, the relationship of the two as integral aspects of a complete situation. Man and Nature are not, as philosophy would so often have it, antagonistic aspects of being, but are actually part and portion one of another, and no system of thought which ignores this fundamental fact can achieve any guidance value for human beings. To be sure, the solution for the present insufficiency of philosophy is not the return to a crude and naïve empiricism, or to primitive superstition, or to a recrudescence of mere emotional reactions, but such a survey of the facts of experience as will include not merely what philosophy has heretofore specialized in, but also what it has so curiously and so

deliberately ignored, the facts, in short, of the complete, integrated, striving, adjusting human personality.

[5]

The Problems of Philosophy. In the preceding sections we have endeavored to indicate, very briefly, the constantly implicit though often unacknowledged and even frequently denied underlying social and psychological intent, i.e., the adjustive, "as if" and belief attitudes involved in such formal philosophy and generalized systems of thought, as are usually called the History of Philosophy. When that record of thought and endeavor is examined from a qualitative rather than an historical point of view, it becomes apparent that certain recurrent "problems" have absorbed the attention of thinkers far removed from one another in time and cultural surroundings, which problems, though differently phrased in different times and places, and differing in immediate circumstances of origin have, nevertheless, a common core of meaning and significance. They have, most of them, been highly abstract and "pure," but they all have arisen from a mass of concrete experience far from abstract of "pure" in the same sense. It is here contended that these problems and their respective belief and "as if" solutions, though they have usually been so phrased that their fundamental significance has been hidden, have each and all of them had a very practical bearing on the social life of the community in which they arose or in which they were debated. They have arisen in the course of the endeavor to remold the social code and mores either in terms of a disintegrating discipline or in terms of something "nearer to the heart's desire"; they represent the presumably best and most authoritative phrasing of guiding principles as well as the presumably widest generalizations of the perplexities of fleeting human experience; they are common alike to amateur and to professional philosophy, and inevitably appear, however disguised, in any serious system of religion. In a word, each such systematic analysis and synthesis of experience as is here called a "problem" is actually an attempt to frame a basis of a way of life, a plan of adjustment, a *vade mecum* to the attainment of happiness, an "as if" platform of attainment and consummation.

That they need to be re-phrased is apparent. If they are to be actually, and not merely designedly, a guide for conduct and expression, they must be reviewed in the light of a more conscious and deliberate philosophizing which views itself as a form of scientific social guidance and which will be based on fact not

fantasy. If they are to cease to be mere fulfillments or symbolizations of wish, if they are to lose their delusional and fantastic nature, they must be phrased in terms of fact and reality. Not all of them can be considered here; a brief table, listing some of the more important and long-lived problems, and contrasting with their historical speculative expression a more concrete and psychologically adequate phrasing, together with a summary consideration of some few of outstanding importance is all that can be attempted at present. The following list, then, is confessedly incomplete and tentative, and the separate problems confessedly overlap.

Speculative Problems of Philosophy with "as if" reference and basis.	*Scientific Problems of Psychology with factual reference and basis.*
1. Knowledge. Epistemology. Categories of Thought.	1. The learning process. Scientific method. Language. Primitive thought. The meaning of meaning.
2. Innate ideas. *A priori* powers.	2. Original nature. Genetic psychology. Culture. The laws of learning.
3. Body, mind and soul.	3. The human organism. Comparative psychology. The nervous system. Anatomy.
4. Freedom and determinism.	4. The "springs of conduct." The Conscious and the "unconscious." Motives, drives, and conditionings.
5. Happiness. Teleology. Purpose.	5. Biological "satisfyingness." Heredity. Gestalt. Structure.
6. Logic. The laws of thought.	6. The evolution of intelligence. Study of language. Primitive thought and method. Thinking as a type of conduct.
7. God, the soul and immortality.	7. Experience. Origin of religion. Original nature. Primitive thought. Meaning.
8. Origin and destiny of man.	8. Progress, its nature and attainment. History. Purpose.
9. State, society and the individual.	9. Co-operative activity. Experiment and experience. Social purpose. Original human nature. Institutions.

10. Platonic Ideas.	10. Social control. Social purpose. Mores and social habits.
11. Casuality.	11. Meaning, purpose and control.
12. Absolutes. Things-in-themselves.	12. Experience. Language. Frustration, belief and symbolic consummation.

Historically speaking, it is true that the attempt to "solve" any one of the problems here listed in the realm of discourse of philosophy has usually involved the necessity of considering one or more others; so likewise, a consideration of one of them psychologically will certainly be found to require an attitude toward and a knowledge of one or more of the others. This would seem to lie in the very nature of our experience, which is not susceptible, as we have consistently pointed out, of analysis or complete understanding by fragments. But there is no need to make an additional "problem" out of this statement (if true!) and speculate as to the nature of "experience as such" or the "irreducible minimum of analyzable experience." This would be right in line with the older discipline; the newer would find the solution (if and when it were sought) within the realm being discussed. That there are other problems, as well as other ways of stating those here listed, has been acknowledged; the present list, however, contains those which, it appears, are of present importance, are still open to discussion, and are of supreme value in social guidance, and in the adjustment of personality to experience.

[6]

Knowledge and Experience. A discussion of the problem of knowledge both from the philosophical and historic point of view and from the point of view of an objective and experimental psychological study will make the contrast more concrete. It will at once, perhaps, be objected that before one may undertake an objective, experimental or psychological study of this problem of such value that any credence may be placed in the conclusions reached, a prior study must be made as to the "nature, the possibility and the limits of knowledge-as-such,"—"knowledge in general." On the contrary, it is here held that no study or investigation of the limits, nature or possibility of knowledge-as-such can be undertaken, if at all, until concrete and experimental evidence of this-knowledge and that-knowledge is assembled and examined. Knowledge of things comes before

knowledge about the process or confines of knowledge-in-general. Knowledge about the limits or possibilities of knowledge in general implies and requires in practice the assumption that knowledge about something is both possible and attained. The proper attitude for a staunch epistemologist of the austere school would be a blank and meaningless stare at the universe which, however, would be no universe for him, but only for a callow, non-epistemological observer living in a world of concrete knowledge. It is no joke to become lost in a wilderness of doubt and he is indeed a wise man who knows that he knows! After all, it is in part a matter of definition and experience, as well as of types of drives and patterns seeking adjustment, and if we so define our premises and inquiries that they make conclusions impossible, we need but recast our line of inquiry, eliminate or re-condition the symbolic "as if" attitudes, and search again for valid conclusions.

It has been theoretically claimed, and is indeed still widely held true by certain schools of philosophy, that the science or knowledge of the possibility of knowledge is prior to any and all other human discussion and belief and that, furthermore, this science of knowledge is no generalization from the realm of attainments in mathematics, physics, chemistry, history or any other branch of research and concrete experience but is an independent discipline, obtaining aid from nothing but its own self and defining clearly the rights, territories and methods, as well as the credibility, of all other inquiries. If a study be not "criticized" by such a theory and science of knowledge it is no study but mere dogmatic utterance of belief; so ran and so runs the epistemological creed. Yet it should be apparent that, in attaining the canons and generalities of their science, epistemologists have but used the very apparatus and outfit of original nature, of structure plus its conditionings of experience, which priest and prophet, scientist and historian, have used for ages and with no greater assurance of their perfection or infallibility. That the epistemologist seeks to fly higher is true; that he seeks to find greater generalizations than history or science offers is also true; but that he has found them, or that his method of research is valid, is here held not true. Knowledge-in-general, as a mere fact of experience, does not exist; knowledge is always and everywhere knowledge of this or that; it is now or then, here or there.

There has also been a tremendous emphasis, as we have already pointed out, on what might be called the intellectual or verbal aspect of knowledge, an emphasis which ignores or denies

the part which perception, memory, activity, feeling-tone, and a host of other things play in the really complex situation of knowledge as well as the facts of motor and emotional-visceral patterns of adjustment and response. To have knowledge of a flower, for example, by perceiving it, is not to have knowledge in any absolutistic or intellectualistic sense, but it is emphatically to have knowledge, then and there, and pre-supposes nothing as to the possibility of that knowledge; it simply is. Meaning and knowledge have other than verbal reference. To have to show grounds for knowing that we know in this instance would get us nowhere; and the assertion that we do (or do not) know, in any instance, takes for granted, at the least, that we "know we have (some) knowledge," which statement would itself be subject to the same criticism as the original and so on back in an infinite regress of "knowings." All of which would get us no further on the path of real living and understanding of experience and adjustment to the world of reality. All of this, of course, is old argument, and much more to the same effect might well be added, the conclusion of which would inevitably be what should long since have been thoroughly realized and acted upon; namely, that epistemology is not fundamental, is not self-sustaining, is not the dictator of the other fields of endeavor, but is, after all, in so far as it has any significance, itself empirical, and inductive. We may, indeed, continue to call that field of endeavor which specializes in knowledge about knowledge, epistemology (if we can avoid the old implications), but it will then be simply one of the sciences, an equal among equals at the best, and will frankly adopt the hitherto despised experimental and empirical methods of research. It will be frankly an activity or branch of psychology; it will, as other sciences, use apparatus, observe the learning process whereby we come to have knowledge or "there is knowledge," it will be interested in the origin and growth of language, particularly in primitive modes and situations of thoughts, and be also particularly concerned with the psychology of meaning and belief and the adjustive function of "as if" patterns.

[7]

Innate Ideas. The problem of "innate ideas" requires little consideration. Most emphatically it is not a problem solvable by speculation; it, too, like the preceding problem, will yield only to actual investigations, experiments and observations. If there are innate ideas, it will suffice to produce them and to exhibit the evidence of their existence or genesis through other than the

medium of mundane human experience. It will be the business of the opponents of such doctrine to show objectively and incontrovertibly that all "ideas" are the product of experience, and that they are all merely verbal patterns of conditioned response; that they are conditioned, if such language is permissible, by the nature of the organism which has experience. Ideas are simply a form of behavior, a reaction to the environment, social and physical, in which they arise. Change either the organism or the environment and the idea, i.e., the verbal behavior resulting from interaction, will be different. Here again we have an experimental problem for the psychologist working in conjunction with the anthropologist and the student of primitive thought and language; it is a genetic problem, individual and racial. Thought ceases to be a mysterious non-human something, imported into human affairs and regulating them from without and above, but becomes emphatically a mode of human conduct, based on structure and the modifications of experience and susceptible to accurate and detailed objective investigation. With the two foregoing problems is naturally associated that of "body and mind." The usual treatment has been highly speculative; attempts that have apparently been inductive have, in part, proceeded from too insufficient data and, in part, been controlled by preconceived notions of what a proper and acceptable solution should or must be. Epiphenomenalism, energetics, limited or complete parallelism, double-aspect theories, monistic conceptions,—one and all still strive for that philosophical supremacy which will permit control and dictation of belief and conduct in subordinate and contingent matters. And it is doubtful if there is yet sufficient ground for a complete and demonstrable solution or description; working hypotheses, yes; final conviction, no. It is, as emphatically as in the case of the other problems we have discussed, a field for unbiased research; it is in experience, not in speculative, verbal concepts, that the solution is to be found. *A priori* musts and necessities will yield in proportion as evidence is accumulated; evidence from many sources,—biology, physiology, the study of the nervous system, the study graced with the name of "psychical research," primitive thought, and a host of others can alone furnish a basis for objective, non-symbolic conclusions.

[8]

Religious Problems. Again, both historically and actually, there is a close connection of the above and the problems of God, the soul and immortality and here, too, the philosophical and

speculative, largely verbal solutions with their pronounced emphasis on "as if" in terms of desire, thwarted consummation and symbolic and substitute achievement, must be replaced by factual and empirical investigations, resulting either in direct and verifiable knowledge or a frank confession of ignorance and agnosticism plus, perhaps, a statement of probabilities and possibilities as a basis for further objective investigation. The meaning and significance of the term "God," unless it is to be merely conceptual, symbolic, and a basis for "as if" reactions, must be based on direct, concrete experience; so, too, with such verbalizations as "soul" and "immortality." If these terms are to be any thing but assumed "as if" bases for the consummation in symbol of concretely thwarted drives and patterns, empirical evidence must be found to support their value and demonstrate their coercive significance. But this again means experiment, observation and rigidly controlled objective thinking instead of wishful and symbolically satisfying speculation and assumption.

[9]

Other Associated Problems. Another group of problems, capable of being treated psychologically or philosophically, i.e., objectively or speculatively, and intimately connected with all those we have already discussed, is that group made up of happiness, determinism and teleology. Here we are dealing, from one angle or another, with drives and their conditionings, either as the functioning of habit, or as responses to present situations, or as present patterns of response in terms of related verbal patterns which represent, in the present moment, a possible, a desirable, or a probable future. The question of "happiness" is particularly interesting. It, too, is one which has been settled in the past on the basis of pure speculation; the facts of the case show clearly that we desire consummations or, better, that we endeavor to satisfy and consummate impulses and desires which are at the moment "ready" biologically to "go off"; that we act on impulses of this nature often with no anticipation of what the effect will be in terms of happiness, pain or pleasure. Speculation has confused the essential and radical distinction between pleasure and a situation arousing a desire. The object of a desire is not pleasure; an object is pleasurable because it is the habitual or biological terminus of desire. Pleasure is the accompaniment of some activities; activities are responses to stimuli, inner or outer; experience and original nature determine for us what stimuli and what responses result in pleasure or pain. Fundamentally, the equations explaining behavior should read in terms

of mechanisms and structures of stimulus, response, and connections between them, and emphatically not in terms of "ideas" of anticipated pleasure or pain. Even with the additional complication of memory, the facts remain the same. It is emphatically a false generalization and verbalization to speak of directly seeking pleasure or avoiding pain; it is equally false and verbal to speak of seeking perfection, or blessedness, or logical certainty, or even satisfaction-in-general. What is actually sought is such a state of affairs, concrete and factual, on the basis of past experience and conditioning, which is satisfying, structurally and biologically, to the organism and its acquired modifications. In every case, the desire and the conditioned object are primary, the anticipated pleasure secondary and largely if not entirely verbal.

But the main point is clear; the so-called problems of philosophy are real problems only in the sense that they are verbal expressions of factual problems and conflicts in the concrete field of experience of the actual individual. They represent verbal statements of possible solutions, though it is here emphatically claimed that the particular verbal solutions offered by philosophy in the historical, formal and usual sense of the term have been largely or entirely delusional and "as if" in their nature and significance, have been in terms of wishes, hopes, frustrations and thwartings, and based on other and fundamental "as if" assumptions about human nature, and have been in no sense solutions in terms of facts and concrete experiential conditions. It is furthermore claimed that solutions can, in each and every case, be worked out in terms of first-hand, concrete experience; that what we have called, in this chapter, philosophy in the ideal, the realistic, the scientific and psychological sense, philosophy as a behaviorism of personality, can find solutions, in terms of experiment, observation and concrete factual research, which will take into account all the facts of both human nature and the world it lives in and hence offer, finally, a set of solutions which will make for better adjustment and which will avoid the fantasy and compensatory qualities and characteristics of speculation and "as if." But further details cannot be given here.

[10]

Behaviorism and Personality. The antithesis and opposition in both theory and fact is clear. Philosophy, in the non-factual and non-behavioristic sense, as an ultra-sophisticated and highly technical type of belief and symbolically adjustive "as if" attitude, but carries on the same business as do myth, magic,

mysticism, religion and any and all other types of substitute and second-hand consummation and achievement patterns. Only in so far as philosophy, or any other system or hierarchy of beliefs, is referred to fact and to direct experience, can it become, in method, in orientation, or in accomplishment, a science, or be of direct, lasting and overt value to human beings. In so far as philosophy, or any other system of beliefs, achieves orientation and consummation through fantasy and symbol, at the expense of fact and biological needs, it ceases to have any but delusional value; it becomes the refuge of the thwarted, the frustrated, the weak, the incapable, the inadequately endowed or prepared, in a word,—the abnormal.

But there is no need to pursue the familiar argument further. What is needed, and what is now, in the light of contemporary detailed and accumulated knowledge eminently possible, is a new résumé, a new co-ordination, a new summarizing of facts and their relationship both to one another and to the needs and nature of human beings as integrated, adjusting, striving, consummating personalities. The older antithesis of an atomistic and relatively barren objective science, or a synthetic fantasy of speculative, subjective, relatively verbal philosophy, is no longer forced upon us. We have the necessary knowledge for at least a tentative framing of synthetic conclusions which will be, not symbolic and fantastic "as if" attitudes as a basis for a delusional escape from the thwartings and frustrations of experience, but a demonstrable and verifiable overt basis for a new philosophy of human behavior, so adequately related to the facts of both Man and Nature and the existing experienced relationships between them that it will properly deserve the description,—a behaviorism of personality.

Such a behaviorism of personality will be, at one and the same time, a science and a philosophy; it will be a science in that it will be based on experiment and research, will be demonstrable and verifiable, and will be a product of first-hand experience; it will be a philosophy in that it will be synthetic and all-inclusive, and show the meaning and significance of the facts one to another, and deal emphatically with the most important phenomenon of experience,—the human personality. Such a behaviorism of personality will be a science in that it will deal with facts and overt aspects of experience, as experience finds them, avoiding premature and forced conclusions in terms of desire and frustration; it will be a philosophy in that it will offer norms, methods and solutions for the achieving, on the basis of the facts of Man and Nature, adjustments and con-

summations inherently worth while and constantly prolific of still further and finer achievements.[3]

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[3] See, also, Notes (1) and (2). For surveys of the History of Philosophy which will show, in some detail, the concrete facts of the general position sketched here, see Conger, Durant, Marvin, and particularly, Dewey, *Reconstruction,* and *Experience and Nature.* See, also, as previously, for presentation of the more philosophical aspects of "as if," Vaihinger; and for general discussion of meaning from a psychological point of view, see Ogden and Richards.

For speculative and practical comments on the possibilities of the forming of a new scientific philosophy, as well as a new social technique of associated living, see Dewey, as listed above, also his *Human Nature,* Robinson, both references, Santayana, Exline, Follett, Freemen, Givler, Kolnai, MacKaye, Marot, Parker, Russell, both references, Wallas, Wells, and Wissler.

Confer also the references, as well as the arguments and conclusions, in the sections of previous chapters on language, patterns of response, learning, determinism, thinking, body and mind, consciousness, and the general psychology of belief.

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